

INTRODUCTION TO ECONOMICS

(INCORPORATING INDIAN ECONOMICS)

Vol. I

Introduction, Consumption and Production

by

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PREFACE TO THE SIXTH EDITION

Opportunity has been taken while sending the book to the press for its sixth edition to revise it thoroughly and exhaustively. The language of the book has been made easier at several places and the treatment has been made more logical and clear. Recent war-time developments have been suitably incorporated by way of illustrations and examples as also separately.

A careful perusal of the papers recently set at Intermediate examinations would disclose a slow but certain variation in the standard as also in the type of information that is expected from the students. I have revised the book throughout its length principally from the angle of meeting this situation and I hope it will continue to serve the needs of the students as fully as before.

The part of the book which deals with test and examination questions has been greatly improved and brought up-to-date. Effort has been made to include all the questions but repetition has been avoided.

I thank the students and teachers of the subject who have taken the trouble of pointing out to me their differences from me and drawing my attention to the places where the treatment needed further clarification. Their names are too many to be mentioned here but all of them will notice that I have given due thought to their points of view and have accepted them in many cases. I hope that this wholesome practice will continue.

University of Allahabad

Allahabad

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INTRODUCTORY SURVEY

Flower in the crannied wall,
I pluck you out of the crannies,
Hold you here root and all in my hand,
Little flower,—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is.

—Tennyson

[CHAPTERS : 1. *The Meaning of Economics* 2. *Economics as a Science and an Art* 3. *Scope of Economics* 4. *Divisions of Economics* 5. *Economics in Relation to Other Sciences* 6. *Economic Laws, Methods and Assumptions* 7. *Development of Economic Life* 8. *Why Do We study Economics?* 9. *Some Basic Terms.*]

CHAPTER 1

THE MEANING OF ECONOMICS

Political Economy has to do with the relations of men living in society, so far as these relations tend to satisfy the wants of life and concern the efforts made to provide for all that is generally understood by material welfare—*Charles Gide*

Economics is a new subject to you ; and, like every new thing, it probably has its own thrills. You must be quite anxious to know what is it all about and what will have to be studied under it. This can be easily explained and understood.

Let us put a direct question to you : Why have you joined the college ? If you give a reply to this question sincerely, you will probably say that your object is to become a civil servant, a judge, a lawyer or some such thing. If you think over the question more searchingly and deeply, you will say that your object is to earn money which may enable you to live a happy and comfortable life. This reply strikes the nail at the right head. It is the *necessity to earn money for the satisfaction of your wants* which compels you to study in the college and acquire education.¹

If you look to other men besides yourself and try to find out the object of their hard work, you will arrive at the same conclusion. Just go to the market one evening and closely watch the activities of the buyers and sellers assembled there. On the extreme right you may find the shop of the bookseller from whom you usually purchase books and stationery. The next shop may be that of the general merchant who supplies you toilet materials, letter-papers and envelopes. You will see other shopkeepers in the line selling various articles, till you reach the end of the row where you might hear 'one price' shopkeeper crying at the top of his voice. "Her ek mal do anna", occasionally, interrupted by the wandering tea-seller recommending his tea in a sweet voice, "Mithi chae pilo babooji." Why all these people come to the market and exert themselves ? There is only one answer, 'For the sake of money.' Besides the sellers, you will also see numerous buyers in the market with money in their pockets, purchasing the articles wanted by them. Children may be found purchasing toys ; students, books ; clerks, pens and pencils ; and ladies, *saries* and other articles. Purchasers come to the market to *spend money with a view to acquire the articles required by them*,

Everywhere human beings will be found to make efforts and *earn money* ; and then to *spend this money to satisfy their wants*.² It is the *necessity to earn money* which can satisfy wants, that prompts human beings to exert themselves in the various occupations. It is this necessity which calls forth human activities in the various walks of life, which makes a shopkeeper keep a shop, a cultivator cultivate a field, a weaver weave cloth, a cook prepare food, a domestic servant serve in a house, a teacher teach students and a lawyer argue cases. Once money is earned, it is spent on the objects of one's desire, and the wants are thus easily satisfied. All the human activities of the above nature, i.e., the activities concerning the earning and spending of wealth, are studied under Economics. Briefly, Economics studies human activities related to wealth.

¹There are certainly some students who study for the sake of acquiring knowledge and not for the sake of earning money ; but such cases are rare.

²Sadhus, Insane persons, and other like individuals may be exceptions to this general rule ; but as Economics studies average human beings, they are beyond the scope of our subject. See pages 8-4, posta.

§ 1. DEFINITION OF ECONOMICS

If you ask an economist to explain to you the meaning of Economics, he will probably proceed as follows :

Men have wants. Some wants are elemental and very pressing like the want for food and water ; others are less urgent, e.g., the want for a car or a beautiful bungalow. All these wants, of different kinds as they are, have to be satisfied. Faced by this problem, men are driven to work in factories and fields, schools and offices and elsewhere ; so that they may earn money by which they may purchase the articles of their desire. This is the reason why labourers work in factories from morn till evening ; cultivators cultivate fields ; shopkeepers open shops ; servants render service ; clerks work in offices ; authors write books ; and doctors treat patients. All human activities related to wealth (and meant to satisfy human wants directly or indirectly) constitute the subject-matter of Economics. That is why they are known as 'economic activities.' Non-economic activities of human beings lie beyond the province of Economics. For example, Gandhiji, Jawahar Lal Nehru and other leaders serve the country as a patriotic duty ; students play cricket and tennis for pleasure ; mothers look after their children out of affection. Such activities are non-economic as they are not undertaken for the sake of wealth ; they are not studied under Economics.

Economics, it should be remembered, is concerned with the activities of *human beings only* ; and not those of other creatures. But it does not study the activities of each and every human being. The human beings whose activities are studied under it must possess the following three qualifications.

(1) *They must be members of society.* A man is by nature a social animal ; he naturally seeks the society of his fellowmen, in the first place for the pleasure which society affords, and, in the second place, in order to have their assistance in supplying his wants. The actions of an individual, as such, affect other members of the society ; as the actions of other members affect him. Just as a limb of a man is related to his other limbs and to the body as a whole, similarly a man is related to his fellow citizens and to the whole of the society. Economics studies the activities of men living in society and considered as units thereof. It does not study man as an individual but as a member of the social organisation. Evidently, the persons who are more or less cut off from society, like lonely Robinson Crusoe thrown upon a lonely island or *sadhus* and *sanyasis* who have lost touch with society, are not studied in Economics. Such persons have their own methods of making efforts and satisfying their wants which are quite different from those adopted by ordinary human beings living in society. They are not studied in Economics ; for as they are exceptions to the general type of men and women we daily come into contact with, the study of their activities cannot be of much practical value. That is why Economics is called a social study.³

(2) *They must be real human beings and not fictitious or imaginary human beings* with supposed characteristics. Old economists assumed that a man was always moved with the only object of getting as rich as possible ; and religion, ethics, politics, etc., had no effect on him. Such a man was called by them 'Economic Man.' But this assumption is quite wrong ; a real man is certainly moved by various other considerations. Consequently all the study based on the assumption of 'Economic Man' has been found to be misleading and has been discarded. Modern Economics studies the man as he is.

³This is the classical view and is invariably to be met with in majority of Indian text-books on Economics. Recently Prof. Lionel Robbins of London School of Economics, one of the greatest living economist, has refuted the idea that Economics is purely a social science. He maintains that Economics studies both a man living in society and one cut off from it. See Robbins, *The Nature and Significance of Economic Science*. But this view is open to question. See my *Reconstructions of Economic Science* (Aligarhabad, 1945).

(3) Finally, they must be human beings of normal or average type. There are some persons, like mad men and women, who are real persons and are members of society, but are not normal persons. A study of their activities cannot be very useful; it may, indeed, be very misleading. Hence such persons are definitely excluded from the scope of Economics. It should, therefore, be remembered that Economics studies the activities of only those human beings who are social, real and normal.

Another point which has to be emphasised is that all the activities of human beings are not studied by Economics. It studies only those activities which are related to wealth.⁴ It is only these activities which lead to the direct or indirect satisfaction of wants and they alone are included in Economics.

The third point which should be borne in mind is that Economics is a science as well as an art. It shows the relationship between cause and effect involved in various economic phenomena, which is the true function of a science. It also prescribes certain rules of guidance for the maximization of material prosperity, which is the true function of an art. Older economists used to regard, and most of the British economists still regard, Economics only as a science. But a vast majority of modern economists firmly believe and maintain that Economics is both a science as well as an art.

The above three points must be clearly mentioned and specified in a correct definition of Economics. We may then define Economics as the art and science studying those activities of social, real and normal human beings, which are related to wealth.⁵ The reader will find Economics defined in different words and ways by different economists⁶; and he must carefully find out if all the above facts are included in them or not.

§ 2. MAN AND WEALTH

In the definition of Economics given above, the word human and wealth are important; for they indicate that Economic studies both man and wealth. But which of the two is more important?

⁴Economics is sometimes defined as 'a science which studies wealth-earning and wealth-spending activities of human beings.' But activities relating to the exchange and distribution of wealth also fall within Economics. Hence this definition is narrow and may well be avoided by students.

⁵This definition can be elaborated further. For this purpose two things need be emphasised: (i) Science may be divided into Positive Science and Normative Science according as it studies the present or describes the ideal. Economics is a positive as well as a normative science. Again, Economics is also an art. Art suggests methods of realisation of the ideal, which Economics also does; (ii) Economic activities fall under four categories: Consumption of Wealth, Production of Wealth, Exchange of Wealth and Distribution of Wealth. (See Chapter 2 post). We can, then, define Economics as a social, positive and normative science and art, which studies those activities of social, real and normal beings which are related to the consumption, production, exchange and distribution of wealth.

⁶Definition by important Economists—(1) Political Economy or Economics is the study of man's action in ordinary business life; it enquires how he gets his income and how he uses it. Thus it is on the one side a study of wealth and on the other, and more important, side a part of the study of man—Marshall, *Economics of Industry*, p. 1.

(2) Economics is the study of business in its social aspect; the word "business" being used in its broadest sense, to cover all lawful ways of making a living—Henry Clay, *Economics for General Reader*, p. 2.

(3) Economics may be defined as the study of the making, exchanging, sharing and using of wealth—Chapman, *Elementary Economics*, p. 1.

(4) Economics is the social science which treats of that portion of human activity which is concerned with making a living—Seager, *Principles of Economics*, p. 1.

(5) Economics is the science that studies human behaviour as a relationship between ends and scarce means which have alternative uses.—Robbins, *The Nature and Significance of Economic Science*, p. 1. (This definition is now most widely adopted. The definition of Economics as a science of human activities relating to wealth, has been given up in its favour by many economists. But this is neither necessary nor justified. See my *Reconstruction of Economic Science*, Aligarhabad, 1945).

Older economists laid emphasis on wealth. They defined Economics as a study of wealth; the human aspect of their study was hardly given any importance. For instance, J. B. Say called Economics, 'the science which treats of wealth', and Walker defined it as 'that body of knowledge which relates to wealth'.

Such definitions had the disadvantage of turning attention away from the real subject of Economics, which is man and his wants, and concentrating it on wealth, which is merely the means of the satisfaction of human wants. It began to be thought that Economics is meant for selfish persons who want to enrich themselves at the cost of helpless members of society, without any regard to ethical considerations. Economics came to be regarded as a self-seeking and purely materialistic branch of knowledge. It naturally aroused opposition in the minds of thinkers and writers of those days. Men of the authority of Carlyle, Ruskin and William Morris described it as a 'Dismal Science' and 'Gospel of Mammon' who is the God of riches. Later economists consequently corrected the mistake of their predecessors and tried to put more emphasis on man and less on wealth.

Modern economists are all agreed that wealth is not an end in itself. It is not produced for its own sake. It is meant to satisfy human wants; and has significance only in so far as it satisfies human wants. If it ceases to do this, nobody will care for it. Wealth is produced for man, not man for wealth. We must give primary importance to man; wealth is only of secondary importance to us. Our object is to promote human welfare; and in Economics we try to find out how far this welfare can be promoted by means of wealth.

We do not study Economics for devising the ways and means of producing more wealth and still more wealth; but how to regulate production, consumption, exchange and distribution of wealth so as to contribute to the maximisation of the welfare of society.⁷ Hence Economics is now considered to be a study of the activities of human beings in so far as they are related to wealth. Marshall, one of the greatest economists, has remarked that Economics is on the one side a study of wealth and on the other, and more important, side a part of the study of man.⁸ It is, therefore, wrong to say that Economics is a purely materialistic or dismal science.

Wealth and Welfare

The ultimate aim of all human activities is welfare or prosperity. Wealth has the capacity of increasing this welfare. The welfare that is produced by wealth is called *material welfare* or *economic welfare* or *material prosperity*. We study human activities relating to wealth because it enables us to increase our material welfare, and not because wealth in itself is something good. The emphasis is on economic welfare, not on wealth. That is why Economics is sometimes defined as a science which deals with the problems of material welfare or a science which discusses how to utilise resources with a view to promote social welfare.

⁷The misery and squalor that surround us, the injurious luxury of some wealthy families, the terrible uncertainty overshadowing many families of the poor--these are evils too plain to be ignored. By the knowledge that our science seeks it is possible that they may be restrained. Out of the darkness light! To search for this light is the task, to find it perhaps the prize, which the 'dismal science' of Political Economy, offers to those who face its discipline—A. C. Pigou, *Economics of Welfare*, Preface.

⁸Marshall, *Economics of Industry*, p. 1.

THE MEANING OF ECONOMICS

§ 3. ECONOMY, ECONOMICS AND POLITICAL ECONOMY

'Economics' and 'Economy'

The word 'Economics' is sometimes confused with the word 'Economy.' The two words come from the same Greek word, and appear to be very similar; this is the reason why a lay man thinks that Economics and Economy are more or less alike in their meaning. Economy literally means saving or frugality, not wasting money, food or any other substance; and it is concluded that Economics teaches us to be economical. But in fact Economics teaches us nothing of the sort.⁹

Economics merely studies human activities in relation to wealth. It may at times explain how much money should be spent, in what manner should it be spent, and so forth. But whether it would advise little or more expenditure, would depend upon the particular economic situation existing in the country. During the time of depression, for instance, when prices are low and unemployment is great, Economics teaches us to spend money freely and on a large scale! It would be, therefore, wrong to think that Economics necessarily teaches us to be economical.

The term 'Economy' is, however, used in Economics in a different and a very special sense: it is used to mean the 'economic system of a country.' For instance, Indian Economy means economic system of this country. Dr. L C. Jain has recently written a book "Indian Economy during the War" which shows the effects of war on India's economic system.

'Economics' and 'Political Economy'

Our branch of study bears two names—'Economics' and 'Political Economy.' 'Political Economy' was an old name and has now been given up in favour of 'Economics.' 'Political Economy' is a defective name because each of these words, 'Political' and 'Economy', has a special significance quite different from what Economics really studies 'Political' means dealing with the State; while 'Economy' means household management or management of one's wealth. Political Economy, therefore, means management of wealth or resources of the State. Now, modern Economics does not confine itself to a study of the management of the State finances; and, therefore, Political Economy is a misleading term to use to describe our subject. This is the reason why its application has been altogether given up; and it is only in the books written by older economists that you come across this term.

TEST QUESTIONS

1. What do you study under Economics? Frame a suitable definition of Economics.
2. Economics studies both man and wealth. Which of them is more important?

Or

"Economics is a material and dismal science". Defend or criticize this statement.

3. Is Economics an art? What is the opinion of classical and modern economists on the subject? What is your opinion, if any?

4. Does Economics teach to be economical? What is the economic sense of the term 'Economy'?

5. 'Political Economy or Economics should teach us the virtues of economy or frugality'. Criticize this statement.

6. If men were never in danger of hunger or other pressing want would they work, or steal or go to war? Are work, and crime, and war economic phenomena?

7. What do you consider the ten most important questions of the day? Which of these are essentially economic questions? How many directly or indirectly involve economic matters?

⁹Moreland writes: 'Economics has nothing whatever to do with economical: we may praise a man for avoiding waste, that is, for being economical, but the science of Economics has nothing to do with praise or blame.'—*An Introduction to Economics*, p. 9.

INTRODUCTION TO ECONOMICS

EXAMINATION QUESTIONS

U. P. Inter. Arts

1. 'Economics is a social science dealing with the problems of material welfare and prosperity of mankind.' Explain and point out the relationship of economics to geography and politics. (1948)
2. Define Economics and discuss how it differs from other social sciences. (1941)
3. What is Economics? How far is the study of Economics helpful in practical life? (1940, 1982)
4. Economics discusses the questions relating to the best utilisation of natural and human resources for the promotion of social welfare. Explain this statement so as to bring out clearly the relationship between man and wealth. (1936)
5. Economics has been defined by some writers as the science of wealth. How far is this definition adequate? Discuss it fully. (1935)
6. If you had to define Economics to an intelligent uneducated peasant, how would you set about it? (1925)

U. P. Inter. Com.

1. What is the subject-matter of Economics? Discuss the value of its knowledge to a businessman. (1948)

Rajputana Inter. Arts

1. Describe the subject-matter of Economics.....(1948)
2. 'Economics is a science of wealth.' Describe the subject-matter of the science of Economics, and say how far the above definition is appropriate. (1939)
3. Describe the subject-matter of the science of Economics. How far is it correct to say that Economics is the Science of Wealth? (1982)

Rajputana Inter. Com.

"Economics is the science of wealth." Why is this definition of Economics regarded as defective? Give what you consider to be the proper definition and explain the subject-matter of the science. (1944)

Other Examination Questions

1. What is the subject-matter of Economics? Indicate its object and scope. What does the economist study? (Punjab 1936, 1938, 1939)
2. 'Economics is the science of wealth in relation to man.' Explain this statement. (Delhi, 1989)
3. 'Economics is the study of man in the ordinary business of life.' Explain. (Calcutta, 1938)
4. 'Economics is the science of wealth.' Do you agree with this definition? Give your reasons in full. (Calcutta, 1929)
5. Examine the following statement—

The main question of Economics is: 'Why all of us, taken together, are as well off—or, as ill off, if that way of putting it be preferred—as we are, and why some of us are much better off and others much worse off than the average.' (Bombay, 1939)

6. Discuss any two of the following statements:—

- (a) 'Economics is the study of man in the ordinary business of life.'
- (b) 'Economic man is the caricature of man as he is.'
- (c) 'There is no antithesis between Economics and Ethics.' (Bombay, I Com., 1940).

CHAPTER 2

ECONOMICS AS A SCIENCE AND AN ART

The English writers who have succeeded Adam Smith have generally set out by defining Political Economy as a science and proceeded to treat it as an art...The modern economists of France, Germany, Spain, Italy and America...all treat Political Economy as an art.—Senior

While defining Economics in the last chapter, we provisionally mentioned that Economics is a science as well as an art. But this statement needs further discussion. Before we can answer the question whether Economics is a science, or an art, or both, we should have a clear idea of the meaning of these terms.

§ 1. POSITIVE SCIENCE, NORMATIVE SCIENCE AND ART

Science and Art

A body of systematized knowledge may be a Science or an Art. Science is again divisible into Positive Science and Normative Science. This classification is illustrated in the chart below¹ :—

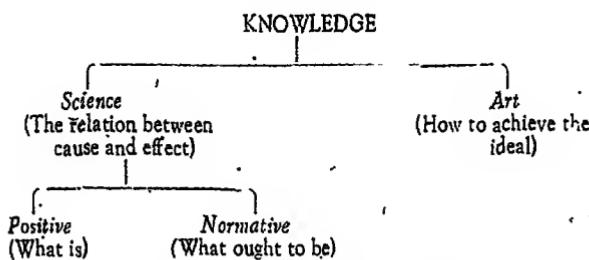


Chart I. Explaining the classification of knowledge.

(1) A Positive Science studies the present conditions or '*What is*'. It deals with the relation between cause and effect within its own field. It does not start with the notion that something is desirable or undesirable; nor does it arrive at any such conclusion as its result. It does not offer precepts and prescriptions. Its sole single concern is to trace effects back to their causes: to project causes forward to their effects.

(2) An Art, on the other hand, starts with the assumption that a certain thing is desirable or that a certain thing is undesirable. The object it seeks to ascertain is how the good may be attained, or the evil avoided. As a result, it issues certain

¹Text book-writers generally define 'science' as concerned with showing relationship between cause and effect. This is, in fact, the definition of Positive Science; not of Science as a whole. This fact should be clearly remembered by students. Science may be better defined as the branch of knowledge studying the present conditions and laying down the relationship between cause and effect, and describing the ideal. I have followed J. N. Keynes in the matter of these definitions, vide his *The Method and Scope of Political Economy*. I do not agree with J. N. Keynes but I have followed him in the interest of beginners. Those who want to study the shortcomings of the Keynesian classification may look to my article, *The Art and Science Analysis of Economics* in the *Mysore Economic Journal*.

precepts and prescriptions, which may lead to the achievement of the good and the avoidance of the evil.²

(3) A *Normative Science* lays down the ideals which are to be striven for and achieved. It discusses what are desirable things and should be realised and practised; and what are undesirable things and should be avoided. In other words, it deals with *What ought to be*. It is these ideals which Art takes for granted and lays down the methods of the achievement thereof.

The difference between these three branches of knowledge is that a Positive Science simply explores and explains relevant phenomena by showing the relation between cause and effect; it studies '*What is*' or the present conditions. The Normative Science studies '*What ought to be*' or the ideals which should be realized. The Art lays down the methods by which the ideals can be realized; or '*What is*' can be brought



Fig. 2. Explaining the relation between Positive Science, Normative Science and Art

near to '*What ought to be*'. The Art is thus the bridge which covers the gulf between the present and the ideal as is shown in the above diagram.

Illustration

An illustration will make this difference clear. Suppose a man asks a physiologist (who is a positive scientist) whether he should swallow poison or not; the scientist will probably reply, 'As a scientist I can only say that if you take it, you will feel such and such sensation and then you will be dead. It is not my function to give you advice.' Our friend may next go to a normative scientist and ask him the same question. The normative scientist will reply him, 'Well, your ideal should be to lead a long life. It is bad to cut short a life by taking poison. This is all that I can say. If you want specific advice, you should go to an artist'. If he approaches an artist, say, a medical doctor, he will advise the inquirer not to take poison since it will upset his constitution and might cause death.

The positive scientist, thus, explains the effect of taking poison; the normative scientist lays down whether it is good or bad to take poison; and the artist directs, to take poison or not to take it.

§ 3. IS ECONOMICS A SCIENCE, OR AN ART, OR BOTH ?

We are now in a position to answer the question: Is Economics a science, or an art, or both? And if it is a science, is it Positive Science, or Normative Science, or both?

Economics as a Positive Science

Economics is a positive science. It surveys the entire field of study acutely and establishes the relationship between cause and effect in all its branches. It states such

²Walker, *Political Economy*, pp. 19-20.

relationships as they exist in the fields of consumption, production, exchange and distribution of wealth. In the field of consumption, it tells us that if the quantity of a commodity possessed by a man increases, the utility of each of its successive units diminishes. In the field of production, it informs us that if additional labour and capital are applied to a plot of land after a certain point, less than proportionate returns are obtained. In the field of exchange, it states that if the price of an article goes up, the demand for it goes down. In the sphere of distribution it suggests that if labourers decrease in number or increase their efficiency, wages will increase. In this way Economics all along shows that if certain thing happens, certain results will follow. The statements of the relation between cause and effect are known as *Laws* in Economics. Economics has established a large number of useful laws showing relationship between cause and effect. Economics, as such, is a positive science.

Economics as a Normative Science

Economics is also a normative science. As a normative science, it is concerned with the formulation of the ideals suggested by economic considerations and aims at the maximisation of economic welfare of society. Normative science of Economics is as yet in its infancy. Economists disagree on the point as to whether Economics can be regarded as a normative science or not. But it is now growingly realised that Normative Economics can and should exist ; and it does exist at present though in a rudimentary and elementary form.

Economics as an Art

Economics may also be regarded as an art. From this viewpoint, Economics may be defined as the subject which suggests the ways and means for the maximisation of production and accumulation of wealth ; and, through it, of economic welfare of society.

Economists, however, are divided on the issue whether Economics is an art or not. Conservative British economists strongly maintain that Economics is simply a positive science and not an art. According to them Economics should simply formulate the relation between cause and effect ; it should not propound the rules of guidance. But economists of other countries of the world do not appreciate this view. The findings of the Science of Economics, they say, should be turned to good account ; and the methods for achieving maximum economic welfare should be formulated. The Science of Economics, thus, leads to the Art of Economics. Economics is both a science as well as an art. Most of the economists of the world hold this opinion ; and Economics has now begun to suggest practical ways and means for increasing the material prosperity of humanity.

TEST QUESTIONS

1. What are the branches of knowledge ? Define the positive and normative science and art. Is Economics a science or an art ?
2. 'Economics cannot be considered to be an art, much less a normative science.' Criticise or defend this statement.
3. Why is Economics spoken of both as a science or art ? (Delhi 1955)

CHAPTER 3

SCOPE OF ECONOMICS

It is the definite and exact money measurement of the steadiest motives in business life, which has enabled Economics far to outrun every other branch of the study of man.—*Marshall*

Having discussed the definition and nature of Economics, we now turn to the problem of the scope of Economics. The student is generally found confused when he is asked to discuss the scope of Economics. To a very great extent this confusion is due to the fact that he does not know what is meant by 'Scope' or what exactly he is required to discuss.

By scope of Economics is meant the field exactly covered by the subject of Economics. To describe the scope, we must discuss :

- (1) What is the subject-matter of Economics ?
- (2) What is the nature of Economics as a branch of knowledge ?
- (3) What are the limitations of Economics ?¹

§ 1. SUBJECT-MATTER OF ECONOMICS

Those activities of social, real and normal human beings, which relate to wealth, constitute the subject-matter of Economics. We agreed to, and explained, this statement in Chapter I and need not repeat the whole discussion here². But we may further analyse and explain these activities below.

Economic activities originate from the feeling of certain wants by human beings, which press for satisfaction. Human wants are satisfied through the consumption of the articles or objects of desire. Consumption of wealth, then, constitutes the first-group of economic activities. But, where does this wealth come from ? It is, of course, produced by men and women. In the early days of civilisation each man or family produced all the things which he or it wanted for his or its consumption, and satisfied the wants directly. Later on it was discovered that, as a general rule, a man has special proficiency in one particular work only ; and so if he devotes himself exclusively to that work, he could produce more wealth than what he could do by devoting himself to the preparation of all the articles of his wants. One began to specialise in one occupation ; specialisation of occupations or division of labour was introduced. Each man, then, began to give his surplus produce to others in exchange for the articles which he required and which others produced. Exchange of wealth thus made its appearance. Meanwhile another important fact dawned upon human beings. They found that they can increase production considerably if they work collectively or in a group rather than individually. This realisation discouraged the system of individual producers, and brought the system of joint or collective producers, as happens in modern factories, into

¹J. N. Keynes, whose book, *The Method and Scope of Political Economy* has long been a classical work on the subject, defines scope, to mean : (1) the description of the subject-matter ; (2) the nature of study, and (3) the relationship with other sciences. I do not think it is necessary to lay much emphasis on the third point except in so far as it is helpful in making the description of the subject-matter and nature of Economics vivid and clear. See my review of *Sciences of Economics* by Kapoor in the *Indian Journal of Economics*, Vol. XXII, page 108.

²If the student has to describe the scope of Economics in an answer to a question, he should, of course, discuss this point in reasonable detail.

prominence. Then the questions arose ; To whom does the wealth produced by their joint efforts belong ? To all of them, naturally. If so, in what proportion should it be distributed among them ? The problem of *distribution* of wealth thus emerged. After distribution takes place and each man gets his share, he spends his income on the objects of his desire. Wealth thus secured is consumed by him and his wants are satisfied. The circle of economic activities now becomes complete. *Economic activities*, as such, divide themselves into four groups, viz., *Consumption, Production, Exchange and Distribution*. They together constitute the subject-matter of Economics.

§ 2. NATURE OF ECONOMICS

Let us now proceed to answer the second part of our enquiry, viz., What is the nature of Economics ? In other words, is it a science, or an art, or both.

This has already been discussed in Chapter 2 *ante*, and the reader is referred to it for a proper answer to this query.

§ 3. LIMITS OF ECONOMICS

The limits of the subject of Economics have been carefully drawn up by its masters. They may be briefly enumerated here :

(1) Economics is not a complete study of all the human activities. It studies only those activities of human beings which are related to wealth.

(2) The measuring rod of Economics is money. Hence it concerns with those desires, aspirations and other affections of human nature, which can be approximately measured in terms of money. If I am prepared to paint a picture for a sum of Rs. 200, my desire to draw it can be measured with this sum ; and this activity of mine falls within the scope of Economics. But if I paint a picture for the sake of pleasure, the question of money does not come in and then my activity will not fall within the scope of Economics.

(3) Economics studies the activities of those human beings alone who are members of society.

(4) The human beings whose activities are studied by Economics must be real and not fictitious.

(5) These human beings must also be of average or normal type.

(6) Economics is a positive science, a normative science, as well as an art. Some economists regard it merely as a positive science, but a larger body of economists considers it a science as well as an art. According to the former the function of the subject is only to explore and explain and not to uphold or condemn. But, according to the latter, Economics must discharge both these functions.

TEST QUESTIONS

1. Describe the subject-matter of Economics ; and discuss its different classes.
2. What are the limitations of Economics.
3. Write a short note on the 'Scope of Economics.'

EXAMINATION QUESTIONS

U. P. Inter. Arts.

1. "Economics is a social science dealing with the problems of material welfare and prosperity of mankind." Explain. (1948)

Rajputana Inter. Com.

1. Indicate the subject-matter of the science of Economics. (1942)
2. Discuss the subject-matter and scope of Economics. How far is Economics useful in solution of practical problems ? Give Indian examples. (1940)

Other Examination Questions

1. What is the subject-matter of Economics ? Indicate its object and scope. What does the economist study ? (Panjab Inter. Arts, 1936, 83)
2. What is your idea of the scope of Economics ? (Calcutta, 1932)
3. Examine the nature and scope of Economics. (B. B. M. 1910)

CHAPTER 4

DIVISIONS OF ECONOMICS AND THEIR INTER-RELATION

Nothing is so great an enemy to accuracy of judgment as a coarse discrimination; a want of such classification and distribution as the subject admits of.—*Edmund Burke*

Economics covers so wide a field that it has been found desirable to divide it into certain parts or divisions. A brief description of the divisions of Economics was presented in a previous chapter. Economics, it may be repeated, seeks to explain "the actions of men in *consuming* such wealth as they possess or obtain as the result of the efforts of themselves and of others; in *producing* further wealth for themselves or for their fellows by utilising and developing the resources of nature; in *exchanging* one with the other, a part of the wealth which they possess for other wealth which they desire; and finally, it considers and investigates how and in what proportions the total wealth of community is *distributed* amongst its many classes and individuals."¹ Thus we get the four divisions, namely, Consumption, Production, Exchange and Distribution. It may be noted at this stage that the State has begun to play a very important part in the economic life of a country so much so that *Public Economics* has now emerged as a separate branch of study. Public Finance is the most important topic of Public Economics.

§ 1. DIVISIONS OF ECONOMICS

1. Consumption

Consumption of wealth is a comparatively new department of Economics. It discusses wants—their origin, nature and characteristics; the laws governing them; and how can we get maximum satisfaction of wants out of our expenditure. The importance of this study can be well realised from the fact that it is the necessity and desire to consume wealth which gives rise to all economic activities. The latter, again, come to a logical conclusion when the wants, which gave rise to them, are satisfied through the consumption of the wealth produced. Economics thus begins and ends with Consumption.²

2. Production

The necessity or desire to satisfy wants leads to the production of wealth, which constitutes another branch of Economics. Under Production, we study the various factors of production, their characteristic features and their efficiency, the laws governing production; how maximum wealth can be produced with the productive resources at our command; and the problems of organisation, combination and trusts.³

¹Thomas, *Elements of Economics*, p. 2.

²Consumption is a new department of Economics, being added to it first by Marshall. Older economists long neglected it; but now its importance is fully realised. No treatise on Economics will be complete without it.

³It is sometimes discussed whether the study of Economics should begin with Production or Consumption. Some economists begin a treatise on Economics with Production because, they say, production is the foundation of Economics. Unless wealth is produced, consumption cannot take place. Production therefore, should come before Consumption. Other economists give the first place to Consumption because it is the existence of wants pressing for satisfaction which leads to the production of wealth. There is an increasing practice among economists to treat Consumption prior to Production; and has been followed in this book.

3. Exchange

The third division of Economics is Exchange. In the primitive stage of self-sufficiency men consumed what they produced. Every family was independent of the outside world in producing and consuming wealth. There was, as such, no necessity of exchange. But as human ingenuity made progress, it was realised that a man cannot be equally skilful in all trades: he generally possesses special aptitude for one occupation or for a few occupations only for which he is best fitted. Now, if each man produces only that thing which he can do most skilfully all the time, he will naturally produce the said commodity far in excess of his personal requirements. Similar will be the case with the producers of other commodities as well. All of them may, then, *exchange their surplus products* with the required articles produced by others. This arrangement, namely, the introduction of division of labour coupled with exchange, was believed to, make the people richer and better off than before. The scheme was actually put into practice, and it was found that it really increased the output and made the people rich. This idea, once caught, has been adhered to steadfastly; and today we possess a very complicated system of exchange. Indian wheat is consumed by Britons; American machinery are used in Indian factories; and Japanese toys are seen in the hands of Indian children. The area and machinery of exchange have been vastly improved in recent times.

Under Exchange, we explain how is it that a book costs, say, just Rs. 3—neither more nor less; how price is determined; what are the agencies making exchange possible. We also make detailed study of money, banks, markets, transport agencies and other auxiliaries of commerce.

4. Distribution

The introduction of division of labour was associated with the introduction of co-operative production. Originally each man produced wealth all alone, so that whatever he produced was his property. But it was found later that if several people work together jointly, the wealth produced by all of them together will exceed the total of what they could produce individually. This new development gave rise to one great difficulty, the difficulty of distributing the joint wealth among the producers. When the various agents of production produce wealth jointly, the wealth produced is the property of all of them; on what principles, then, should it be *distributed* among them? Distribution, as a department of Economics, thus came into being. Under Distribution we study the various agents of production, how is the share of each of them in the joint produce determined, is our system of distribution just, and similar other problems.

Distribution is the most pressing and difficult problem of Economics, and has good scope for original work. The movement known as Socialism⁴ is, at its bottom, mainly a result of the bad system of distribution. In the modern industrial society, the productive capacity has increased tremendously. On all sides we see gigantic factories, mills and farms. Now, such an increase in the scale of production of wealth should be ordinarily associated with the richness of all the members of the society. This, however, has not been the case. On the one side, we see the rich, the capitalists who are getting richer daily, and who spend their lives in luxuries of all

⁴Socialism is one of the most important international movement of today. Literature on Socialism is increasing rapidly. The variance in opinions on this subject is also tremendous. A case for Socialism has been made out by Sparg and Arter in *Elements of Socialism*; and against it, by Hernshaw in *A Survey of Socialism*. Beginners may read my small booklet *Goodbye to Capitalism?* (4 as., Kitab Mahal, Allahabad.)

sorts and description. On the other side are to be seen the poor, labourers and cultivators, who are getting poorer and deeper in debt from day to day and have to live on insufficient food, clothing and shelter. And while the masses do not get even the chance of satisfying their elementary wants, thousands of tons of coffee are burnt in railway engines in Brazil and hundreds of tons of cotton destroyed by U. S. A. each year! What is the reason of this great paradox? A very important reason is that the problem of distribution of wealth has not been properly solved by the modern communities. Capitalists do not give to labourers and cultivators their fair share of joint product. Thus a large part of wealth produced goes to a handful of men, while the large majority gets only a small part of it. The correction of this evil system of distribution is an important aim of Socialism. This line of thought has made the subject of Distribution the most important branch of Economics.

5. Public Economics

Besides studying these four branches of Economics, we shall also study economic problems faced by the modern Government. The branch of Economics devoted to the purpose is known as Public Economics.⁵ It discusses such problems as follows: Should the Government intervene in ordinary economic life? Should land be nationalised? Should Government run the railways? Should they force prohibition? The most important subject of Public Economics is known as Public Finance, which we shall discuss later on in detail.

§ 2. INTER-RELATION BETWEEN THE DIVISIONS OF ECONOMICS

From the above account of the divisions of Economics it should not be concluded that these departments are completely cut off from each other and that there is no relation between them. This division is purely a matter of convenience in study and analysis; as it is, these divisions are the limbs of the same body and have close intimacy with each other.

Consumption is the beginning of Economics. The imperative need for the satisfaction of human wants leads to economic activities. These activities lead to the production of wealth which might be consumed for the purpose of satisfying wants. But productive efforts have, in modern times, become specialised and co-operative. By specialisation is meant that a person is now usually a specialist in the production of one thing alone. He produces only that thing which he can do most skilfully and exchanges it with the articles of his requirements, which are produced by others. Specialisation thus leads to exchange. By co-operative character of production, we mean that individuals no longer work alone; they work in groups instead. The wealth produced by a group of persons naturally belongs to all the members of the group and thus gives rise to distribution. When the wealth is distributed and each producer receives his share of income, he purchases the articles of his necessity with this money and consumes them for the satisfaction of his wants. The circle of economic activities thus becomes complete.

Consumption leads to production, and production, through exchange and distribution, leads back to consumption. Public Economics, the fifth division of Economics, comes in to watch and see that private individuals carry on economic activities to their own best advantage and to the best advantage of the society to which they belong.

⁵Some writers mention *Public Finance* as the fifth division of Economics. But this is wrong since *Public Finance* is a part of *Public Economics* which, in fact, is the fifth branch of Economics.

Consumption may, as such, be described as the top of the tree of economic activities. The root of this tree is production; and exchange and distribution are the stems which support the top. The analogy may be completed by comparing Public Economics with a gardener, who exercises supervisory powers and sees that the economic tree grows to the full and natural height, who protects and waters it, or cuts and prunes it according to the requirements of the moments.

We shall now describe the relation of each department of Economics with all the other departments.

1. Consumption and Production

The relation between consumption and production is quite intimate. *Consumption makes production possible*. Goods are produced only because they are consumed; if certain goods are not likely to be demanded for consumption, they will not be produced. Nobody will think of producing books in the land of the illiterate and liquors and intoxicants in the land of complete abstainers. Again, it is the consumption which makes people fit to carry on production. Just as consumption makes production possible, similarly *production makes consumption possible*. Goods can be consumed only if they are produced; and if they are not produced they cannot be consumed.

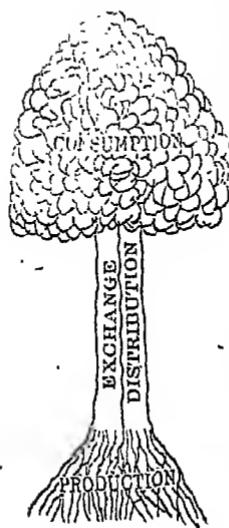
Fig. 5. Showing the Economic Tree.

for consumption. During the war time the demand for arms and ammunitions increases enormously, and these things are produced even to the neglect of other goods. In peace time the demand for the destructive goods is small and their production is correspondingly low. It is interesting to note how the nature of production changes with a change in fashions and tastes. There was a time when felt caps were largely in demand and were, therefore, produced in bulk. But now they have been replaced by Gandhi caps; and production has consequently shifted from felt caps to Gandhi caps. Just as consumption determines the nature of production, similarly *production moulds the character of consumption*. People can consume only those goods which are produced; and by discouraging or encouraging production of certain goods, their consumption can be reduced or increased. Under the Congress regime, for instance, the production and use of liquor was prohibited in certain areas and the drinking of tea and milk was attempted to be popularized. The discontinuance of the production of liquor and the encouragement of the production of milk and other beverages had its effect on the nature of consumption.

Consumption also limits the extent of production. Producers try to anticipate consumers' demand for a certain good and produce it only to the extent of the likely demand. If they exceed this limit, their goods may not sell, and they may suffer a loss. *Production, similarly, sets a limit to consumption*. People, of course, cannot consume more than what has actually been produced.

2. Consumption and Exchange

Consumption in the modern society depends upon exchange. In primitive society, the relation between wants, efforts and satisfaction was direct. As soon as a want was felt by somebody, he made an economic effort, and the want was satisfied. If a man felt hungry, he plucked wild fruits and appeased his hunger. Under this system,



exchange was not necessary ; wants were satisfied without exchange ever coming into the picture. But that state has long passed away. Now-a-days consumption is not possible without exchange. Man has now become a specialist and whatever he produces has to be exchanged for the objects of his consumption. Not only this ; economic efforts are now made into groups. Each group obtains an income by the exchange of goods jointly produced ; this income is then distributed among the members of the group. The latter, again, exchange the individual income for the objects of their consumption. Exchange has thus become inevitable for making consumption possible. *Consumption is similarly essential for the existence of exchange.* Unless a thing is an object of consumption (directly or indirectly), it cannot be an object of commerce as nobody will ever purchase or sell it.

Under exchange we discuss value-in-exchange ; under consumption, value-in-use. And value-in-exchange depends, to a considerable extent, upon value-in-use. This tie binds consumption and exchange closely together.

3. Consumption and Distribution

The relation between consumption and distribution is very intimate in modern society. It is the necessity for consumption which leads men to make efforts. Productive efforts are now-a-days co-operative and joint. Hence, the joint produce, or the income derived from its sale, belongs to all the members of the productive group. This joint income is distributed among the members who then consume the objects of their desire. Evidently, then, consumption in modern days takes place only after distribution has been accomplished. Again, the nature and volume of distribution determine the consumption of society. If distribution is favourable to some and unfavourable to others, the former will have plenty to consume as compared with the latter whose consumption will be limited. The consumption of an individual again, depends upon his income or the share of the national dividend he gets ; and the size of national dividend upon actual production.

4. Consumption and Public Economics

Consumption is a field wherein the State finds ample room for interference in order to augment social welfare. The State interference is sometimes so drastic and far-reaching that the consumption of a particular article is altogether prohibited. Such a step is taken only in case of those commodities which are extremely harmful. Liquor is such a commodity and its consumption is sometimes prohibited by the State. When the Congress was in office, it adopted the policy of prohibition due to this reason. The Government sometimes impose a less severe restriction in the form of a tax. When a tax is levied on a particular commodity, its price generally tends to rise. When people find that they have to pay a higher price than before for a certain article, they reduce, if not actually give up, its consumption. The State intervention in many other cases is very moderate ; it takes the shape of *simple supervision*. For instance, the Government of U.P. have taken some steps to guarantee the supply of pure ghee. The supervision with regard to the true weights and measures is also an example. Such supervision improves the quantity, or quality, or both, of consumption if it is effective.

Public Economics depends upon consumption in certain ways. Necessity of the regulation of consumption is one of the reasons for the existence of a Government. Again, the income of the State depends to a certain extent upon consumption. The Government may expect to derive a certain amount of revenue from a tax imposed on the consumption of specified articles. But if the price of these articles goes up as a consequence and people reduce their consumption for this reason, the expectation of the Government may not be realised and the budget might show a deficit.

6. Production and Exchange

Production depends upon exchange. In the modern days, production is carried on, not so much for the personal consumption of the producer, as for sale in the market. It means that almost all the goods produced are exchanged; and the goods which cannot be exchanged are not produced. As a matter of fact, the process of production is not complete until the goods produced are placed in the hands of final consumers; and exchange is the connecting link between production and consumption. Exchange makes possible large scale production, division of labour and localisation of industries, and these may be said to help production.

Exchange, in its turn, is dependent upon production. Unless an article is produced, it cannot be exchanged. And the larger the production, the greater the exchange activity. Through division of labour and large scale production, production has contributed much to the growth of exchange.

6. Production and Distribution

Production affects distribution. Only that which is produced can be distributed. In other words, production determines the size of national dividend; and since national dividend is the amount which is distributed, also the magnitude of distribution. If production increases, distribution assumes larger proportions; if the former decreases, the latter shrinks.

Distribution also affects production. The nature of distribution determines the ability and willingness of labourers to work, and through it, the volume of production. If labourers feel that they are not given a just share of the wealth jointly produced, they remain dissatisfied and though they work in order to keep themselves alive, they do not labour whole-heartedly. Then, again, the distribution may be so unjust as to leave a very small income to workers, such that they may not be able to keep up their efficiency. Unjust distribution consequently injures both the ability and willingness of the labourers to work and thus reduces the volume of production. If distribution is just, agents of production feel satisfied and contribute their maximum to production which tends to become large. The nature of production is similarly governed by the nature of distribution. If the latter tends to make the rich richer and the poor poorer, production will tend to shift from necessities to articles of luxury; and vice versa.

7. Production and Public Economics

The nature and volume of production largely depend upon the efficiency of the State. If the State guarantees the security of life and property and a just system of distribution, production is pushed onward till it reaches the maximum limit. If, on the other hand, there is insecurity of life and property, if there is the danger of robbers or of warfare or of unjust taxation, production will be cut down to the minimum possible limit. The policy of the State also determines the nature of production. If a backward country follows the policy of "free trade" in the modern days, it will tend to become agricultural; but if it adopts a "protectionists" policy, it will tend to become industrialized.

Public policies also take into consideration the existing system of production and are so designed as not to injure it, and it possible to encourage it. Moreover, the income of the State is derived from taxes on the production of various commodities; and the larger the production, the greater the public revenue. Again, the larger the production, the greater the income per head and the larger the taxes on income and on personal consumption.

⁴The policy of allowing free import and export of goods is known as "free trade" policy. But when imports are checked through the levy of light duties (taxes) on importation, with a view to develop home industries, the policy is said to be a "protectionist" policy.

8. Exchange and Distribution

Whatever is produced by a group of producers is meant for exchange, and is sold in the market. The amount realized is distributed among the agents of production. In a modern society, then, exchange is a condition precedent to distribution. Again, the amount received by an agent is used by him for the purchase of the articles of consumption. Distribution is thus necessarily followed by exchange. Moreover, the amount to be distributed depends upon the price at which the goods produced have been sold. Exchange, thus, determines the volume of distribution.

Exchange is also influenced by distribution. If the volume of distribution is large, the income per head will be substantial, and the things that the people will purchase (exchange) will be equally voluminous.

Exchange and distribution are very intimately linked together for another reason as well. Exchange studies the problem of the determination of price in general. Distribution relates itself with the study of the determination of the price of specific objects, viz., the factors of production. Distribution, as such, deals with certain special problems of exchange.

Public Economics has to deal with several problems of exchange. The entire exchange mechanism, and every link of that mechanism, is kept in tact and order by the strong Governmental legislation and administration. The problems of the issue of metallic currency, the supervision of the banking system, the gradation and standardization of commodities, the weights and measures are also solved by the Government. If the Government neglect any of these duties, the delicately poised exchange mechanism may collapse and may bring ruin to the entire economic system. Exchange, as such owes much to Public Economics; and the latter derives many of its problems from exchange.

10. Distribution and Public Economics

The State plays an important part in determining the nature of distribution. In a communistic State the distribution of income takes place according to the wants of its members. In a socialistic State, on the other hand, distribution is according to the capacity of, or the work done by, each member. In a capitalistic economy, the principle is that of demand and supply. Even in the latter, where the State interference is minimum, the Government try to correct the injustice done to labourers through factory laws, public health programmes etc. Taxation is now practised by almost all the modern States to correct the injury inflicted upon the workers by unjust distribution.

TEST. QUESTIONS

1. What are the important divisions of Economics. Give a short description of each of them.
2. "The divisions of Economics are made simply to facilitate the study." Elucidate.
3. Show the relationship between the various divisions of Economics ?

EXAMINATION QUESTIONS

U. P. Inter-Arts

1. Discuss with examples the relation between (a) wants and production, (b) consumption and distribution, (c) economics and psychology. (1944)
2. What are the chief divisions into which the subject-matter of Economics is generally divided by writers? Discuss the inter-relation between the different divisions. (1926, 1934 & 1940)

U. P. Inter-Com.

1. Define Economics and show how it has failed to solve the problem of distribution. (1982)

Other Examination questions.

1. State the main branches into which the study of economic theory is divided, and discuss their relation to each other. (Punjab, 1935)
2. "Economics is split up into different branches or departments merely to facilitate study and analysis.....Its various divisions are actually closely related to one another and all are essentially inter-dependent." Discuss. (Delhi, 1938)

CHAPTER 5

ECONOMICS IN RELATION TO OTHER SCIENCES

Because of the organic connection of these relations, their common origin, Man, and because Economics deals with the individual as he is, it is impossible wholly to dissociate the social sciences, and particularly impossible to divorce Economics completely from Ethics and Politics. This does not mean that these sciences are all one and cannot be profitably sub-divided. On the contrary, because of the limitations of human mind they must be studied separately so far as is possible.—*Bly*.

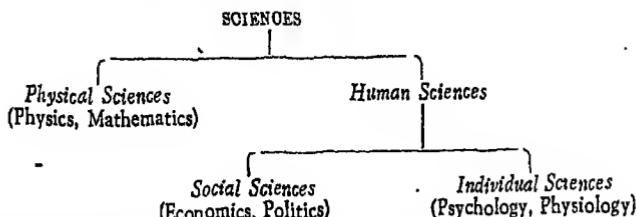
§1. SEPARABILITY OF ECONOMICS

Economics is a science quite separate from other branches of knowledge. This does not mean that Economics has no relation whatever with other sciences. No subject, in fact, can be separated by any definite line of demarcation from all others; in some manner, more or less remote, all knowledge is related to all other. This is also true of Economics which has close intimacy with other sciences, all of which have richly contributed to its growth. It has been aptly remarked that "the economist takes from all sciences, by turns, all facts which bear upon the one subject, wealth; considers them only so far as they bear thereon; and puts them together and builds them up into a 'body of knowledge' which he calls Economics". Had the assistance of other sciences not been available, Economics would have been quite different from what it is at present.

The intimacy of Economics with other sciences is very natural. Since the mind that has developed the various sciences is one and since many of them study the same object, namely, Man, there is a fair degree of unity, resemblance and inter-dependence between them. Economics is a separate science only in the sense that there is a definite and distinct field of study which constitutes the subject-matter of Economics; but it is, on that account, not cut off from other sciences.

§ 2. TYPES OF SCIENCES

Sciences can be divided into two broad categories: (1) those which study man; and (2) those which study physical facts, e.g., Chemistry, Physics, etc. The former are called *Human Sciences* and the latter *Physical Sciences*. Human Sciences are subdivided into two classes; (a) those which study human being as a unit of society and are called *Social Sciences*: they are grouped under *Sociology*; and (b) those which study man as an individual, e.g., Psychology and Physiology. They may be called *Individual Sciences*. The classification of Sciences may be shown as below:



Economics is closely related to all the above branches of study—the Physical Science and the Individual Sciences.

§ 3. ECONOMICS AND SOCIAL SCIENCES

Social activities of human beings (or activities of men in relation to society) can be divided into four broad categories, corresponding to each of which there is a separate social science. They are as follows :

(1) Activities relating to *wealth*, e. g., the earning of money and the consumption of wealth for the satisfaction of wants. Such activities are studied under *Economics*.

(2) Activities relating to *State*, e. g., the administration of the country and the election of representatives to the Assembly. Such activities are studied under *Politics*.

(3) Activities relating to *morality and right conduct*, e. g., the speaking of truth, the feeling of pity for the weak and the poor. Such activities are studied under *Ethics*.

(4) Activities relating to *law*, e. g., punishing the thief and imposing death penalty on the murderer. Such activities are studied under *Law or Jurisprudence*.

The following diagram shows the main branches of Sociology :

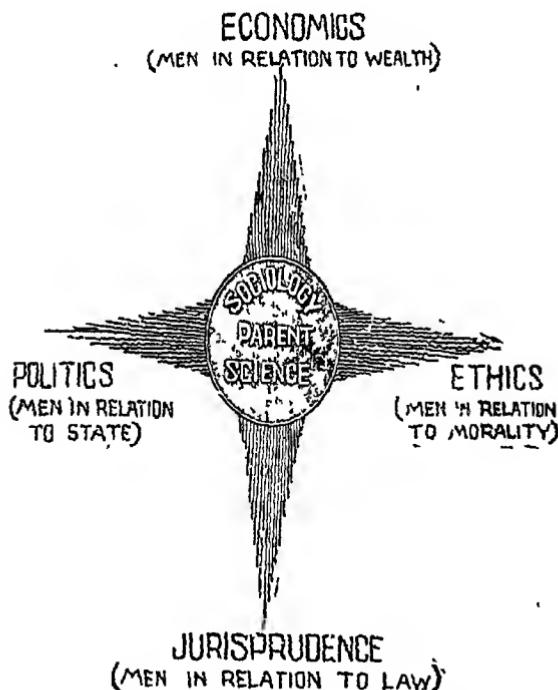


Fig. 4. Showing branches of Sociology.

Economics and Sociology

Sociology¹ is the name given to all the Social Sciences combined. Sociology is the parent science from which issue the various social sciences, *viz.*, Economics, Politics, Ethics and Jurisprudence. Economics is, as such, a branch of Sociology and studies those social phenomena which are related to wealth.

Economics takes into consideration many sociological facts, like the gregariousness of human nature and the mutual effectiveness of various social sciences in order to complete itself.

Economics and Politics

Economics and Politics are both social sciences and have close intimacy with each other: Politics studies man in relation to State, while Economics studies man in relation to wealth. Both of them study different aspects of human activities, the aspects which are closely related to each other. This fact has tied together these Sciences in a very natural and definite sense.

All economic activities are carried on within the limits of the State and under its supervision. Naturally, therefore, the nature of the Government must decisively affect the economic system of the country. If the Government is just and fair to all, the people will work hard and sincerely and the country will be rich. In a badly and unjustly administrated country, on the other hand, people will reluctantly cut down production to the minimum and the country will remain poor. Again, the system of consumption, production, exchange and distribution in capitalistic countries like England and America, is quite different from what it is in fascist countries like Germany and Italy or in a communistic country like Russia.

The nature of Government is, in its turn, dependent upon economic conditions. The Government in the hunting stage was different from the Government in the handicrafts stage, and the latter very much dissimilar from the present day Government.

The absolute inseparability of Economics and Politics is testified by Public Economics which is common to both the sciences. Public Economics can be broadly divided into Economic Activities of the State and Public Finance.

The connection between Economics and Politics has become very close during recent years. The extreme form of this closeness is to be found in Russia where the Government mostly owns, operates and controls the entire economic system. The same is true, to a great extent, of fascist or totalitarian States, like Germany and Italy. The capitalistic and democratic countries like England and America have also drifted to the principle of controlled economy and economic planning in order to solve the economic problems in partial imitation of Russia, Germany and Italy. During the present War, this control has assumed an absolute and thorough character in almost all the countries of the world. In India the control of the Government has always been considerable. The slackness of the people to take to new ventures naturally led the Government to start their own enterprises. Railways, canals, etc., are all Government properties. The State intervenes in various economic spheres less directly through Agricultural Department, Co-operative Department, Industrial Department, Nation-building Departments, etc.

SOCIOLOGY

(Studying the different activities of social men)

Economics
(Men and
Wealth)

Politics
(Men and
State)

Ethics
(Men and
Morality)

Jurisprudence
(Men and
Law)

Economics and Ethics

Economics studies how wealth may be earned and spent. Ethics is the science of proper or right conduct. Since wealth is to be produced and consumed in the right way and since the right conduct of life includes the earning and disposition of the requisite wealth, Ethics and Economics are intimately connected. All economic activities have an ethical aspect, as all ethical activities have an economic aspect. Each science has to recognise, respect and draw upon the other science.²

Economics as a positive science formulates the principles according to which rent, wages, interest and profits are determined. In the payment of all these rewards, the question of ethical justice enters. Positive Economics has to take account of these factors. *Economics as a normative science* sets up the ideal to be pursued in the economic sphere. It tells us what is fair rent, fair wage, fair interest and fair profit. It gives us the concept of just price, just taxation and just expenditure. All this work involves definite and certain ethical deliberation. Here the relation between Economics and Ethics is very close. The closeness becomes quite prominent when we consider *Economics as an art*. In the suggestion of the ways and means for the achievement of an ideal, Economics must act according to ethical dictates. If it means to act against ethical principles, it will be looked down upon and nobody will pay attention to it. For instance, Economics must not prescribe theft as a remedy of the poverty of the masses : for its moral effects will be very bad. People will probably begin to think that stealing is legitimate ; an era of uncertainty and immorality will set in, which will check all progress. It is thus clear that Economics depends on Ethics to a fairly large extent.

Economics and Jurisprudence

The science of Law or Jurisprudence lays down what people may or may not do. The economic life of the nation is shaped by its legal system. If the law of the land ensures security of life and property and guarantees that each man will get fair remuneration for his labour and that he will be left free and secure to enjoy the fruits of his labour, people will get unlimited incentive to work ; production will increase ; and the country will be economically well off. But if the legal code does not provide security of life and property and allows some members of the society to appropriate a share of the product of others' labour, the productive mechanism will slow down, and the country will be economically poor. At the time of the break-up of Moghul Empire in India, for instance, there was much disorder and danger to life and property, with the result that economic development of the country greatly suffered. But the maintenance of peace and order within the country later on proved very favourable for its economic progress.

The effect of Law on Economics is very well shown by the inheritance laws, say of England and India. In England the law of primogeniture (that is, the inheritance of the property by the eldest son) has led to large holdings and concentration of land in few hands. In our country, the law of equal inheritance has brought about exactly opposite results, namely, small holdings or possession of tiny plots of land by a large number of people. Almost every aspect of economic life, like trade, transport, combination, monopolies, weights, measures, adulteration, banking, currency, etc., are fashioned by the law relating to it.

Just as Economics is dependent upon law, similarly law is fashioned by the nature of economic conditions. The outbreak of the present War required the Government of India to collect increased funds. Therefore, a law imposing tax on excess

² "Since Economics like Ethics, is primarily a Social Science, the true economic action must in the long run be an ethical action. The modern economist has become just as mindful of the ethical aspects of every economic problem as the modern moralist has been forced to recognize the economic side of his ethical problem." "What is ethically advantageous must in the end also be profitable to the business world."—Seligman, *Principles of Economics*, p. 25.

profits, known as Excess Profits Tax, was passed. The appalling condition of the factory labour in this, as in other countries, has led to the enactment of Factory Act.

Besides the above social sciences, Economics is also connected with History and Geography.

Economics and History

The close intimacy between Economics and History cannot be exaggerated. Economics has drawn upon History very considerably for its own development and perfection. The usefulness of History has been so fully realised by economists that they have fondly included in their study the following historical surveys: (1) History of the economic development of a people, called *Economic History*, and (2) Historical survey of the growth and formulation of economic theories, known as *History of Economic Thought*. These two branches of History have been of immense value to Economics.

(1) *Economic History*. Economic History is of great advantage to the economist. Firstly, it gives historical details about some economic phenomena like famines and business cycles which can best be studied in the light of past history. Similarly, history of excessive issue (hyperinflation) of paper currency in the post-War Germany and the post-Revolution France throws ample light on the theory of paper currency. Secondly, it furnishes the basic material out of which economic theories can be made. At the same time, it tests or confirms the various economic theories, thus affording a final proof of their accuracy or otherwise. For instance, the Malthusian Law of Population has not been borne out in all its details by history and has, therefore, been modified now. Finally, the knowledge of the past sometimes enables us to foresee the future happenings and suggest ways and means of assisting, avoiding, or remedying them. Economic History, for instance, shows the repeated occurrence of business depression and bank failures or crises. The possibility of their re-occurrence leads to their careful study along constructive lines.

(2) *History of Economic Thought*. History of Economic Thought is also of great importance to Economics. The study of a theory from its origin to the present stage is of evolution, and a similar study of other competing theories which it has superseded, makes its meaning and purport very clear. It also helps us not to repeat past mistakes; and shows the scope for further progress. Moreover, the connections of economic doctrines with their underlying institutions and condition makes the doctrine of relativity very clear; while the dependence of Economics on other branches of knowledge is also brought to light.

Economics and Geography

Geography is the study of man in relation to his environment. It studies how are his activities conditioned and shaped by his surroundings. The economic activities of men, namely, the activities relating to wealth, are definitely shaped and formed by his environment. As such, the intimacy between these two branches of knowledge is close. To a certain extent, economic conditions of a country form a part of Geography; or a certain portion of the Geography of a particular country is economic in character. This portion which is common to Economics and Geography, is known as Economic Geography.

§ 4. ECONOMICS AND INDIVIDUAL SCIENCES

Just as Economics is closely related to the sciences which study man as a member of society, similarly it is intimately related with those sciences also which study man as an individual. The most prominent among the latter sciences is Psychology.

Economics and Psychology

Psychology is the science of the mind and studies such mental phenomena as will power, motive power and power of concentration. Each one of these psychic Phenomena is of immense value to an economist for these are exactly the things which he deals with. A study of Economics is fundamentally the study of the wants of men, the efforts made by them to satisfy them and their ultimate satisfaction. Wants, efforts and satisfaction, are the main links of the chain of economic activities, each of which is a psychological process. Mostly speaking, the task of the economist is to measure these phenomena with the measuring rod of money. Economics is, therefore, "anchored in Psychology".

Indeed, some economic laws are psychological in their nature. The law of Diminishing Utility (which says that the more you have of a thing, the less you will want its each successive units, other things remaining the same) is the expression of a psychological fact. The law of demand, the law of supply and the law of substitution simply show how human mind is likely to work under certain circumstances. The theory of trade cycles and industrial fluctuations has been partially built upon psychological findings. Fatigue, rest periods, agreeableness of work and pleasantness of surroundings, are all psychological processes and are studied by Economics.

§ 5. ECONOMICS AND PHYSICAL SCIENCES

Physical sciences study physical phenomena. Economics is related to these sciences inasmuch as it takes their conclusions for granted and on their basis formulates its own laws. Thus Chemistry says that matter can neither be produced nor destroyed. Taking this fact for granted, Economics defines production as the creation of utility, and consumption as the destruction of utility; and not of matter. The Law of Diminishing Returns, which has a proud place in the departments of Production and Distribution alike, is based on the findings of Agricultural Chemistry. The trade cycles and crises have often been explained with the help of astronomy. Jevons' "Sunspot Theory" of trade cycles and Moore and Beveridge's similar doctrines, are astronomical.

Economics and Statistics

The science of Statistics is concerned with numerical facts. It collects, classifies, presents and compares numerical data relating to particular problems and then draws generalisations or laws from them. Economics also deals with quantitative and numerical data. The application of Statistics to Economics has, therefore, led to enormous benefit to our science.

Specifically, Statistics has the following advantages to Economics. Firstly, statistics describe an Economics phenomenon very admirably. For instance, if we wish to describe the foreign trade of a country, the description would not be complete unless we give statistics or figures of the exports and imports. Secondly, some economic problems are numerical; and here the dependence of Economics on Statistics is absolute. For example, if we want to find out how prices of gold have fluctuated since the beginning of the present century, we must have price statistics of gold for 41 years. Thirdly, there are some economic problems which cannot claim final accuracy until they have been tested by statistics. Finally, some economic theories have been directly derived from statistics. The Malthusian law of population is such an example.

From the above account the inseparability of Economics and Statistics can be well appreciated. In fact, there is a branch of Statistics which exclusively deals with economic problems and is known as Economic Statistics. As you progress in the study

of Economics you will find that you have to make liberal use of graphical methods, like charts and graphs, to illustrate your point, all of which fall under Statistics.

Economics and Mathematics

Even a science like Mathematics has been of great use to economists. For a long period the application of Mathematics to Economics had been a subject of controversy. On the one side were economists of the standing of Cournot, Jevons, Edgeworth and Pareto, who made extensive use of Mathematics in their study of Economics and testified to the extreme usefulness of the process. Jevons went to the length of stating that Economics is essentially mathematical in its nature,³ a statement which is admissible if Mathematics is taken to mean all quantitative data. On the other side were economists like, Mill, Cairnes and Leslie, who showed their disinclination towards the application of Mathematics which, in their opinion, was barren and useless for economics.

This controversy has now been set at rest and the usefulness of the application of Mathematics to Economics, which constitutes the subject-matter of Mathematical Economics, is well realised. Economics is, in fact, rapidly becoming mathematical. The mathematical method stimulates precision of thought and clarifies the relationship between economic factors, like demand, supply and price, in an admirable way. But too much dependence on it leads to economic toys and useless mental gymnastics. If used with proper precautions, it has the possibilities of showing good results.

TEST QUESTIONS

1. Is Economics an independent science? Give reasons.
2. Give a classification of sciences. What are the important social sciences?
3. "Economics is closely related to all social sciences." Do you agree? If so, why?
4. Is Economics related to Physical Sciences? Illustrate your answer.

EXAMINATION QUESTIONS

U. P. Inter. Arts

1. Discuss with examples the relation between...economics and psychology. (1944)
2. ...Explain and point out the relationship of economics to geography and politics. (1948)
3. Discuss the subject-matter of Economics and give the relation of the science to Ethics, Politics and Sociology. (1957)
4. ...What is the relation of Economics to Politics and Ethics? (1958)
5. Show in what manner Economics is related to other sciences. Illustrate. (1950)

³"Economics, if it is to be a science at all, must be a mathematical science ..simply because it deals with quantities." Jevons, *The theory of Political Economy*, p. 3.

CHAPTER 6

ECONOMIC LAWS, METHODS AND ASSUMPTIONS

There is not a single law, economic or other on which we may depend absolutely. The validity of natural laws is conditional upon the orders of the universe not being overthrown ; that of economic laws, upon no fundamental change taking place in human nature, as we know it. If ever a change should come... then, indeed, no economic laws will be valid.—N. G. Pierson

§ 1. ECONOMIC LAWS

The Meaning of Economic Laws

While going through this book, you will come across various 'Laws'. These Laws are scientific laws and should not be confused with statutory (*i.e.*, legal) or customary or moral laws. Economic laws establish the relationship between cause and effect, and are, therefore, of scientific nature.

An economist studies human actions in the ordinary business life, tries to find out the connexion between causes and effects, and then expresses them in the form of general statements. Such generalizations are known as Economic Laws. For instance, economists observe that if the price of a commodity goes down, the demand for it increases. Let us take the example of Fides pencils which can be purchased at 2 annas each. If the price comes down to one anna per pencil, you may be tempted to purchase more pencils than before. This is true with regard to all the articles. From this the economist generalizes that if price falls demand increases. This is an economic law—the law of demand ; it is the statement of tendency and seeks to show the connexion between cause and effect. Such *generalized statements of human tendencies concerning wealth are known as Economic Laws.*

Economic laws have two main characteristics. Firstly, they are social, dealing as they do with the conduct of men considered as members of society. Secondly, they refer to economic motives, the motives which can be measured by money. Marshall, therefore, defines economic laws as follows : "Economic laws, or economic tendencies, are social laws relating to branches of conduct in which the strength of the motives chiefly concerned can be measured by a money price."¹

Types of Laws

It is obvious from the above that the term 'law' is used in Economics in a scientific sense. The word, in general usage, is used in various other senses as well, 'with which the reader is probably aware. A law may be statutory, or moral, or customary, or scientific.

Statutory Laws are the ordinances of the Government and require the members of the State to do or not to do certain acts. For instance, the Indian Criminal Procedure Code requires a man not to cause physical injury to any person ; such an offence is punishable by imprisonment and other penalty. These laws are generally enacted by a particular State which enforces it within its jurisdiction ; outside this limit, they are inapplicable. Those who break the law are punished. Statutory laws are not fixed in character for all the time to come ; and are amended from time to time. From the

¹Marshall, *Economics of Industry*, p. 26.

above account of statutory laws, their difference from economic laws becomes fairly clear. Economic laws are not passed by any particular State; nor is their operation restricted to any particular country. They are the expressions of human tendencies and are true of all human beings and of all countries. They do not enjoin people to do or not to do certain acts. Nor are their offenders punished by any authority.

Moral Laws are the laws dictated by moral and ethical considerations and require men to act in accordance with those dictates. For instance, the ethical commandments to speak truth and to be kind to others are moral laws. Offenders of such laws are supposed to be punished by the Almighty in this world and the world to come. Economic laws are definitely not of this nature. They are not moral commandments; nor do they call the wrath of God upon the offenders.

Then there are *Customary Laws*, that is, the laws established by customs and traditions. In Hindu society, for instance, there are definite customary laws regarding the ceremonies to be performed at the time of marriage or death of somebody. Economic laws are, of course, different from customary laws.

Finally come *Scientific Laws* which establish the relationship between cause and effect. Economic laws perform exactly this function. Therefore, economic laws are scientific laws.

The Inexactness of Economic Laws

Economic laws, as said above, are the statements of certain human tendencies. In other words, they simply state that under certain circumstances, human beings tend to act in a certain fashion. They do not assert that a man must necessarily behave in the stated way. Human beings have free will and they may or may not act in that manner. Economic laws only say that they will *most probably* act in a particular fashion under particular circumstances.

This point may be easily illustrated. The law of demand states that if price rises, the demand will fall. This is what usually happens in daily life. But there are cases when the demand rises immediately after a rise in price. During the war period, for instance, the prices of arms and ammunitions rise up sky-high, but still the demand for them goes on increasing tremendously. Again, suppose Gandhiji comes to Allahabad and nobody can see him unless he wears a Gandhi cap. In such a case the demand for Gandhi caps will increase tremendously even if the price of such caps rises fairly high.

It must, however, be admitted that there are certain laws in Economics which are exact under all circumstances. The law of diminishing returns, is such a law. After a certain point in cultivation is reached, the application of each successive dose of labour and capital is bound to yield diminishing returns, provided other things remain the same. This law has two assumptions, namely, the arrival of a certain point in cultivation and the unchangeableness of other things. If these two assumptions obtain in practice, the law will definitely operate. There is no exception to this law.

We conclude, therefore, that some economic laws are absolutely correct but a large number of economic laws have an element of uncertainty or inexactness. The reasons for this inexactness are mainly two. Firstly, men and women whom Economics studies are living beings and possess free will. Their acts are, as a consequence, so variable and uncertain that the best statements of tendencies about the human

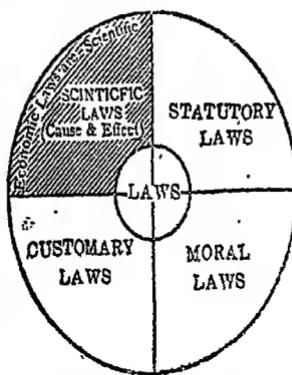


Fig 35. Showing the various kinds of laws.

conduct must necessarily be inexact and faulty. Secondly, economists do not have the facility of performing experiments under desired conditions, as can be done in a laboratory; so that absolute correctness in the formulation of the laws is not possible.²

Economic Laws Compared with Physical Laws

Economic laws are not as accurate as the physical laws which are absolutely exact. The laws of physical sciences relate themselves to physical facts which are unchangeable, certain and of universal application: physical laws, as such, also possess similar characteristics. Moreover, physical laws can be derived and tested under laboratory conditions which helps in their correct formulation. The law of gravitation (which states that a body is attracted to the ground), for instance, is a physical law and is altogether exact and certain. Whether you throw a hat or a coin in the air, it must come down; and whether you do so in Allahabad or in Calcutta, in London or in New York, is also immaterial. Similarly the attraction of iron by a magnet when both are placed near each other is a fact of invariable exactness and universal application. These illustrations show that physical laws are absolutely exact and universally applicable. If we compare economic laws with physical laws, we find that our laws are inferior to physical laws in points of exactness, invariability, and universality of application,³ for reasons already explained.

Marshall observes that there are no economic tendencies which are as steady in operation and as precisely measurable as gravitation; and consequently there are no laws of Economics which can be compared with the law of gravitation. But they can be very well compared with the laws of tide which are not always exact—their operation may be obstructed by heavy rainfall or strong wind. In the opinion of Marshall, as such, the laws of Economics should be compared with the law of tides rather than with the law of gravitation.⁴

Economic Laws are the Most Exact Social Laws

Economic laws are not so exact as physical laws, but they are the most exact of all the laws of social sciences. The reason why economic laws are superior in point of exactness to all other social laws is that economic motives can be measured by the measuring rod of money, while no other social science has the facility of any quantitative measurement. In Economics motives are measured by money—rupees, annas and pies. If you want a pen and will offer Rs. 10 for it rather than go without it, the intensity of your want for the pen can be measured by Rs. 10. Similarly, if you will charge 4 annas for typing out a page, the displeasure of typing out a page can be measured by 4 annas. This privilege of measurement, which is denied to other social sciences and is available to Economics, goes a long way in making Economics fairly exact—more exact than any other social science.

²Since an economist can very rarely experiment he must content himself with watching the changes that take place in conditions, and their results, and arguing as to the meaning of his observations, it is largely due to this fact that economic laws are far less definite, and open to many more exceptions, than is the case in sciences where systematic experiments are possible. It is very difficult to be sure that we have not overlooked some change in the conditions, that has taken place; and even serious students may thus be misled and may attribute a result to a cause which in fact has had little or nothing to do with it, just because they have overlooked the true cause or causes. See Moreland, *An Introduction to Economics*, pp. 6-7.

³Prof. Robbins argues that economic laws are as precise, within the limits of the assumptions, as, or even more precise than, physical laws. See Robbins, *The Nature and Significance of Economic Science*. Also see Knight, *Scientific Method in Economics*, in the *Trend of Economics* (Tugwell).

⁴Marshall, *Principles of Economics*, pp. 81-82.

§ 2. METHODS OF ECONOMICS

Every science arrives at its conclusions, generalisations and laws through some logical process. This logical process by which we arrive at generalisations or laws of a science is known as its *method*. Economics makes use of two important methods, namely, the deductive method and the inductive method.

Deductive Method

Under the deductive method certain basic propositions regarding human nature are taken for granted and from these propositions broad generalisations are derived. For instance, it is a fundamental fact that all men die one day. Smith is a man. Therefore, he will die one day. There is a simple example of the deductive method. Jevons aptly describes deduction as "getting knowledge from other knowledge."⁵ A large number of economic laws has been discovered in this way. The economic law of diminishing utility has been arrived at deductively. We know that men do not generally attach as much importance, to the second unit of an article as to the first; and not so much to the third as to the second; and so on. From this psychological fact it has been deduced that as the stock of a commodity increases, the utility of each additional unit goes on diminishing, other things remaining the same.

Early economists made the use of the deductive method alone. But the exclusive devotion to the deductive method, to the neglect of the inductive method, misled them. Even the fundamental propositions about human nature with which they started were sometimes wrong; and they, moreover, did not verify their generalisations by actual observation. The laws arrived at through such defective deduction were naturally faulty. Undue and exclusive emphasis on deductive methods thus put the cart of Economics on wrong lines. German economists first revolted against this state of affairs and introduced the inductive method in Economics. Since then the popularity of the inductive method has widely increased.

Inductive Method

According to this method, we first observe the relevant points concerning a particular phenomenon, which are collected in adequate quantities and subjected to close scrutiny. From the data thus collected, generalisations are drawn which are known as laws.

Malthus followed this method in formulating his theory of population, namely, that population increases faster than food supply. He painfully studied the history of all the important countries of the world; and from the facts thus collected, derived the Law of Population.

Inductive Method vs. Deductive Method

It is sometimes debated as to which of these two methods is of greater use and importance in Economics. It is the opinion of modern economists that both of these methods are important and useful. "Induction and deduction are both needed for scientific thought as the right and left foot are both needed for walking."⁶ In those departments of Economics where facts and data are not easily available, deductive method is largely used, as for example in Consumption, Exchange and Distribution. But where adequate facts and data are available and the fundamental propositions about human

⁵Jevons, *Logic*, p. 18.

⁶A sentence from Schmoller, the great German economist, which has become classic.

nature are lacking, as for example in Production, the inductive method is generally used. Our subject of Economics would have been very imperfect and ill-developed if today were both these methods not utilized according to their suitability and propriety.⁷

§ 3. ASSUMPTIONS OF ECONOMICS

Economic laws are ordinarily accompanied with certain conditions; in other words, they are limited by certain assumptions. They always state that provided such and such things exist, this cause will lead to this effect. The reason why economic laws involve assumptions is that human beings, whom Economics studies, have free will and are under certain circumstances influenced by a large number of considerations. All such variable factors cannot be taken into consideration at one and the same time. Economists, therefore, take certain conditions or assumptions for granted, and state what will be the result of certain causal forces under the assumed circumstances.

The most important assumption made by economic laws is "other things being equal" or "other things remaining the same." The implication of these phrases is different in different cases, and depends upon the context in which they are used. Other assumptions are the existence of free contact, no-rent land, human propensity to be led away by monetary considerations, etc. Some pertinent remarks have been made by Marshall on this subject, which may be quoted here in *toto*:

It is sometimes said that the laws of Economics are "hypothetical." Of course, like every other science, it undertakes to study the effects which will be produced by certain causes, not absolutely, but subject to the condition that other things are equal, and that the causes are able to work out their effects undisturbed. Almost every scientific doctrine, when carefully and formally stated, will be found to contain some proviso to the effect that other things are equal: the action of the causes in question is supposed to be isolated; certain effects are attributed to them, but only on the *hypothesis* that no cause is permitted to enter except those distinctly allowed for.⁸ The assumption made by certain economists are not exactly true but they are a near approach to reality. We already come across perfectly free competition; but in stock exchange markets and elsewhere, this position is approximately reached. No-rent is not generally to be found, but land paying negligible rent is not a rare occurrence. Man is guided by religious, patriotic, political and other considerations, but a consideration of wealth is of definite importance. It is clear, then, that our assumptions are nearly correct and, therefore, the laws based on them are close approximation to reality.

TEST QUESTIONS

1. What are the connotations of the term 'law' in everyday speech? How do they differ from the economic sense of this term?
2. Show how far economic laws are exact?
3. Are economic laws as exact as physical laws? If not, what is their use?
4. "Economic laws are the most exact of all the social laws." Do you agree? Give reasons.
5. What do you mean by a 'method'? What methods are followed by economists?
6. Write a short note on "Assumptions in Economics".

⁷All the devices for the discovery of the relations between cause and effect which are described in treatises on scientific method, have to be used in their turn by the economist; there is not any one method of investigation which can properly be called the method of Economics; but every method must be made serviceable in proper place, either singly or in combinations with others....But in some branches of economic enquiry and for some purposes, it is more urgent to ascertain new facts, than to trouble ourselves with the mutual relations and explanations of those which we already have. While in other branches there is still so much uncertainty as to whether those causes of any event which lie on the surface and suggest them, selves at first are both *true* causes of it and the *only* causes of it, that it is even more urgently needed to scrutinize our reasoning about facts which we already know, than to seek for more facts.—Marshall, *Principles of Economics*, pp. 29-30.

⁸It has been forcefully stated by certain writers in recent times that economic laws assume other things to remain the same, which they never are. Economics is, therefore, a unrealistic science. See Mrs. Barbara Wootton, *The Lament for Economics*.

EXAMINATION QUESTIONS

1. What is the nature of economic laws? Compare and contrast them with the laws of physical sciences. How do they differ from statutory laws? (Panjab, 1930)
2. What do you understand by Economic laws? Distinguish the economic laws from each of the following :—
 - (a) Covet not what is thy neighbour's.
 - (b) Bodies heavier than air fall downwards when unsupported.
 - (c) Any person found driving a motor vehicle without a license will be fined Rs. 50. (Delhi, 1928)
3. What do you understand by the term law in Economics? Show by means of examples how economic laws differ in character from statutory laws. (Delhi, 1931)
4. ...What are the methods employed in the study of Economics? (Delhi, 1939)
5. ...Define the term 'Economic Laws'. (Calcutta, 1933)
6. Discuss the value and limitations of the chief methods of study of Economics. (Calcutta, 1932)
7. Explain the nature of Economic Laws, and show how "Economics does not give us conclusions directly applicable to Policy". (Bombay, I Com., 1939)
8. What are Economic Laws? How do they compare with those of Physical Sciences.
(D. Com. I. M. C., 1937)

CHAPTER 7

DEVELOPMENT OF ECONOMIC LIFE

Wants—efforts—satisfaction.....this is the circle of Political Economy—*Bastiat*

We shall now study the various ways in which men, from earliest times to the present, have been earning their living. In other words, we shall discuss the development of economic life.

Since his earliest abode on this planet, man has made tremendous progress. This development has taken place in all walks of life—social, political, economic, ethical and others. Here we were concerned with the economic development only. Economic progress of human beings has, indeed, been remarkable. The original man used to remain naked, sometimes covering his person with bark and leaves of trees or skins of animals, and to eat wild fruits and flesh of animals. The average man of today is a completely changed being ; his wants have multiplied and the satisfaction of these wants has become an extremely complicated process. He keeps his body, covered with cloth from Manchester and silk from Tokyo ; eats Chinese soya beans, and Mediterranean oranges ; and drinks American syrups and French champagne. The economic progress of humanity has been profound.

The economic development of society may be studied from two points of view ; (i) The Development of Economic Activities of the Individual ; and (ii) The Development of Economic Organization of the Society. We shall trace the economic evolution along both these lines in § 1 and § 2 respectively.

§ 1. DEVELOPMENT OF ECONOMIC ACTIVITIES

The feeling of wants which press for satisfaction leads man to make economic efforts. These efforts result in the satisfaction of his wants, directly or indirectly. Wants, efforts and satisfaction—these are, then, the important links in the chain of economic activities. The relation between wants, efforts and satisfaction was direct, simple and uninterrupted during the infancy of society. The economic chain then had only these three links and no more. But the progress of society has lengthened the process of satisfaction of wants, and at the present time many more links have been added to the economic chain.

1. The Stage of Direct Efforts

In the earliest stage of history, the relationship between wants, efforts and satisfaction was very intimate and direct. As soon as a want was felt, effort was made to satisfy it, and the satisfaction was obtained. When the savage felt hungry, he plucked some wild fruits and ate them up. If he wanted a shelter, he collected twigs of trees and prepared a crude shelter. This was the first stage of economic life and is called the *Stage of Direct Efforts*. In all the subsequent stages, the relationship between wants, efforts and satisfaction became *Indirect*. The following diagram illustrates the essentials of the first stage :—

STAGE I

Wants—Efforts—Satisfaction

2. The Stage of Indirect Efforts

In the first stage of direct efforts, each man himself produced everything he wanted for his own consumption. This he could afford to do in the earlier days when wants were very few and simple and could be easily satisfied. With economic progress, however, wants multiplied and became complex. Man now discovered that he could not himself produce all the articles of his consumption efficiently. He could satisfy more wants if he (i) produced only one or a small number of articles which he could prepare most efficiently; and (ii) exchange whatever he produced (keeping with him so much as he required for his own use) with other things he required.

He was thus compelled, for reasons of advantage, to lengthen the chain of economic activities. Whenever the want for a particular thing was felt, effort was made to produce the articles for which the person concerned had special proficiency; and then the articles produced were exchanged for the objects of his desire. Thus exchange intervened between efforts and satisfaction; in other words, a gulf was created between efforts and satisfaction which was bridged over by exchange. The relation between wants, efforts and satisfaction thus became indirect, as is shown below :—

STAGE II

Exchange
Wants—Efforts — Satisfaction

3. The Stage of Industrial Grouping

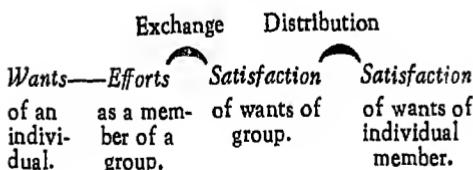
As human knowledge increased, people began to realize that they could increase their output still more and satisfy still more wants if, instead of working individually, they worked jointly in groups. In other words, they began to appreciate the advantages of co-operation and association, which they soon put into practice.

An example will make the new improvement effected under this stage clear. Suppose a man wants a chair. In the first stage of direct efforts he will prepare it himself. In the second stage of indirect efforts, it will be prepared by the carpenter; and the man, who wants it, will get it from him in exchange for some other thing, say, cloth, which he (the consumer) has produced. In the third stage of industrial grouping, the chair will be prepared not by one man but by a number of men working in a group. Thus one man may fell trees; another may bring them to the place of work; a third may cut them into planks; a fourth may make a chair out of the planks; and a fifth may varnish it and give it the finishing touch. Five persons working jointly prepare the chair.

The above example of the preparation of chair in the third stage raises an important question : When five persons prepare a chair, to whom does it belong ? Naturally, it belongs to all of them. And whatever they get by bartering it, is distributed among them equitably. The share of each individual enables him to satisfy his own wants.

In the third stage, then, the feeling of want leads to efforts which are combined and joint. Combined efforts bring the satisfaction of the group through exchange. The individual member of the group obtains satisfaction through the distribution of the earning of the group. The following diagram makes it clear :—

STAGE III

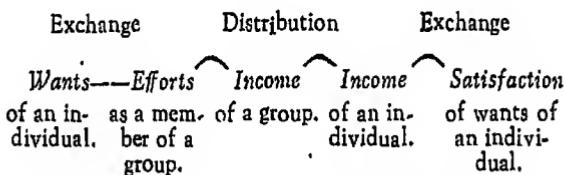


4. The Stage of the Use of Money

Hitherto exchange took the form of barter. Articles were exchanged for articles ; money had not yet come into use. But the barter system had several difficulties to solve which money was introduced.

The introduction of money all the more lengthened the chain of wants, efforts and satisfaction. Whatever was produced under co-operative production, began to be sold for money, and the group now obtained a certain money income. The income of the group began to be distributed among the individual composing the group, thus resulting in the obtainment of individual incomes. With this income each individual could purchase the article or articles he required and obtain satisfaction. This is the present stage of economic evolution and is illustrated below :—

STAGE IV



§ 2. ECONOMIC ORGANIZATION OF THE SOCIETY

The above is the history of economic activities of the individual. Now we shall describe the various stages through which the economic organization of society has passed since the earliest times. They are : (i) the hunting and fishing stage ; (ii) the pastoral stage ; (iii) the agricultural stage ; (iv) the handicrafts or commercial stage ; and (v) the industrial stage.

1. The Hunting and Fishing Stage

In early times, men used to support their lives by hunting and fishing. In this stage the wants of human beings were very limited and could be easily satisfied. For instance, when a man felt hungry, he just plucked some wild fruits and leaves or went fishing. If he wanted something to cover his person, he made use of barks of trees or skins of animals. If he wanted a shelter, a cave or a dense tree served the purpose. *Man depended for the satisfaction of his wants on what he found ; he did not make anything.* Wants were few and simple and they were satisfied in simple ways.

Of all the wants, that for food was the most difficult to be satisfied, and shaped the economic life as a whole. The plucking of fruits and plant was an easy task, but when it was necessary to kill animals with rough instruments, much exertion and skill were required. There were, then, times when fruits and plants did not grow due to famine

or some other reason, and the animals became scarce due to fatal diseases or due to their flight in large numbers when being chased by hunters. When animals moved to some new tract, men had to follow them. Population was, therefore, migratory and sparse. On an average a man required 70 to 80 sq. miles of land to maintain himself.

Very often fresh tract would be obtained only by dispossessing others ; and this would necessitate wars which were common in those days. The vanquished were killed and their flesh was eaten by the conqueror with pleasure. Prisoners could not be allowed to live since they could not be easily fed. Hence cannibalism, i.e., the practice of eating human flesh was prevalent. It should, however, be noted that fishing tribes were more peaceful than hunting tribes. They did not move from place to place very frequently for fish increase in number so rapidly that they remain plentiful in spite of being caught. This population was, therefore, dense and fixed.

The principle of private property had not yet made its appearance. By private property is meant the ownership of property by private individuals. In the hunting and fishing stage nobody possessed anything ; whatever was required was no sooner obtained than it was consumed. Each individual was self-sufficient, and exchange had not yet originated.

2. The Pastoral or Nomadic Stage

The next stage of economic evolution is known as the pastoral stage. Animals were the centre around on which the economic life was built up in those days. Increase in human intelligence had led to the realisation of the value of animals. They provided milk and wool ; they ensured a regular supply of meat : they could also be used for riding purposes. Men, therefore, began to tame useful animals instead of killing them. The supply of milk, etc. imparted an element of stability and surety in their hitherto precarious existence.

Animals live on grass which grows on pasture lands. The domestication of animals is, therefore, closely related to the availability of pasture lands. And the discovery of fresh grazing grounds for animals was an important problem which the people of the pastoral stage had to tackle. As soon as one grazing ground ceased to be useful, they migrated along with their animals to newer areas. Men, thus used to wander from place to place not for their own food but for the food of their cattle. When green grasslands were found, men used to live in fixed abodes temporarily. Since food supply was greater in this stage than in the preceding

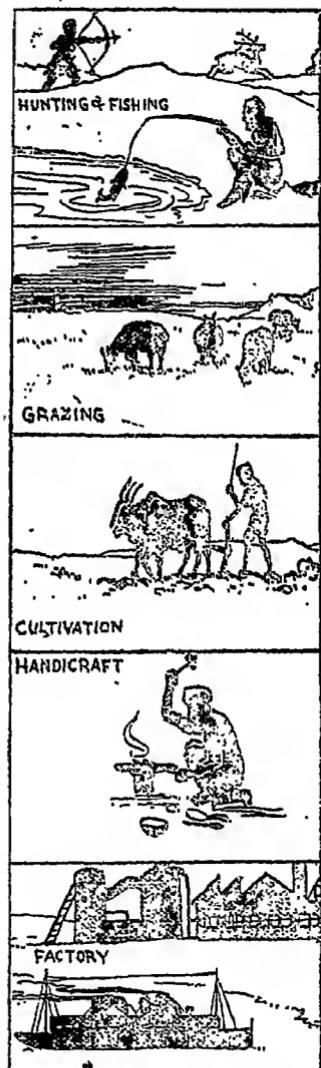


Fig. 6. Explaining the evolution of the economic organization of society.

one, the *population also tended to be denser*. The necessity of fresh grazing grounds was a fruitful source of wars. But the practice of killing war prisoners was given up in this stage, for they could be better utilised as slaves for looking after the animals and for other rough work. The *system of slavery had its origin in these days*.

The greater stability and increase in the food supply and the practice of keeping slaves, resulted in some leisure which men utilised in doing finer and better things. Instruments and implements began to be made, and better houses began to be constructed. *Economic progress had its beginning in these conditions*.

Private property also made its appearance now. Animals were owned personally and were given personal supervision. But private property was not yet extended to land. Self-sufficiency continued to be the key-note of economic life and exchange did not yet appear.

3. The Agricultural Stage

So far man's existence was precarious, and he was on the look out of a secure source of food supply. An increase in his knowledge and his growing control over Nature led him to hit upon agriculture or the tillage of soil as a solution. This was the next stage in the economic evolution of society.

The cultivation of a plot of land required people to live in fixed abodes and at a particular place. The *migratory character of population was weakened*. Moreover, people began to live together as far as possible with a view to ensure safety ; while increase in production could support dense population. These facts gave rise to *corporate living*, to hamlets and villages.

Man had hitherto controlled only animate nature ; now he began to control even inanimate nature. His productive capacity increased, became stable and he began to have more leisure. *Ideal conditions for economic progress were thus created*.

Slaves were very helpful in agricultural organisation for all the rough, heavy and exhaustive work could be thrown upon them. The *system of slavery was, therefore, strengthened in this stage*. So was the *system of private property*. Land became a very useful thing and was found limited in supply ; the principle of private property was readily extended to it.

Warfare continued even in this stage. Whenever crops failed or animals died, or when more land or more slaves were needed, clan conflicts took place. Self-sufficiency and absence of commerce still largely remained the characteristics of economic life.

4. The Handicrafts Stage

With the passage of time, man's knowledge and the leisure at his disposal increased and he began to manufacture small things like knives, boats, etc. The numbers of occupations increased ; and men began to specialize in certain occupations. Some persons became carpenters, others blacksmiths, and still others agriculturists. Society was thus split up into a large number of occupations. The manufacturing occupations were known as handicrafts because most of the work was done by hand. Hence the name the 'Handicrafts Stage.'

Specialization brought exchange on the stage. When men began to specialize in one particular occupation, they produced only one or few things, and it was necessary for them to exchange their surplus produce for other articles which they needed. Exchange or commerce became a necessary economic phenomenon and the trader was born.

In the beginning one *article* was exchanged for another *article*. In other words, *exchange took the shape of barter*.¹ But barter had several difficulties like the need of

¹Exchange of article for article is known as barter ; exchange of an article for money, sale ; and exchange of money for an article, purchase.

double coincidence of wants, absence of a measure of value and others, which shall be discussed in detail under Exchange. These difficulties led to the invention of money, after which exchange took the shape of purchase and sale.

The first articles manufactured by man must have been weapons to kill animals and to fight. Later on useful articles like utensils, cloth, etc. would have been prepared. These things began to find markets slowly and gradually. As markets increased, merchants began to give raw materials to village artisans and get the articles prepared from them to order. The system is known as *domestic system of Industry* and prevailed before the modern factory System.

5. The Industrial State

The pace of economic progress, however, continued ; and inventive genius of the human race brought *machinery on the stage*. The invention and use of machinery led to such a remarkable change in the economic conditions of society that an era of 'Industrial Revolution' was said to have set in. The Industrial Revolution first came in England and covered a century, from 1750 to 1850 roughly. From England it found its way to the other countries of the world. The machinery which were newly invented were very costly and complicated and were driven by power, as for example, water, steam and electricity. It is this stage to which the society has reached today. So important is the part played by power—water, steam and electricity in modern times that the present age is known as the "Age of Power."²

The introduction of machinery resulted in very fundamental and far-reaching changes. Powerful and costly machinery have necessitated the working together of hundreds and thousands of workers under one roof. Machinery have increased output tremendously and have lowered the cost per unit, thus driving the handicrafts out of the field. Big factories are to be seen everywhere these days. Big factories naturally lead to big towns. A factory is set up at a particular place usually because the latter has various industrial advantages like the availability of raw materials, labour, capital, etc. The establishment of the factory brings into prominence the industrial advantages of that place and other industries are also attracted thereto. After some time it grows into a big industrial centre. Many a silent hamlet has thus been converted into busy industrial towns ; and *big factories and big towns have become the most prominent features of the modern society*.

The introduction of costly machinery and the establishment of big factories have created a split in the society. The society has now been divided into those who own such costly things, called capitalists ; and those who do not possess them and simply work in the factories for wages, called labourers. Capitalists and labourers are generally at daggers drawn. Labourers feel that it is they who work and produce things. But still they are given only a few annas daily while very large profits are pocketed by capitalists. As a matter of fact, these profits should be given to them because it is their labour which creates them. Capitalists, on the other hand, feel that they invest enormous capital in factories and it is only natural that they should get substantial reward therefor. This conflict often leads to "strikes" and "lock-outs",³ which are unwelcome interruptions in the otherwise smooth running of the economic mechanism.

²We are not only using steam power and electricity but also water power far more efficiently than ever before chiefly to generate electricity. Perhaps wind power alone is used less than formerly, and we shall doubtless find ways to store up the force of the wind in the shape of electricity too. We are using the direct rays of the Sun and the force of tides, and proposals have been made to use the earth's internal heat. For this reason our modern economic stage is often called the "age of power"...B. G. Bhatnagar, *Outlines of Economics*, pp. 86-87.

³ When labourers refuse to work, a "strike" is said to have taken place ; but when factory-owners close down the factories and refuse to give work to labourers, it is said to be a "lock-out".

Machinery has enabled men to control Nature and to harness her resources for productive purposes. *Production has, therefore, increased enormously.* It has been associated with a corresponding increase in trade and commerce which have become international. Trade is carried on with the help of certain auxiliaries like transport, banking and financial systems, all of which have been largely improved. Money economy has been replaced by credit economy to give sufficient scope for modern economic activities. In the modern industrial stage, manufacturing industries occupy a central place, trade and commerce are considered to be their auxiliaries, while agriculture is given a minor position, though the importance of agriculture has been increasing since the last Great War.⁴

TEST QUESTIONS

1. What is the relationship between wants, efforts and satisfaction? Elucidate it with reference to the historical evolution since earliest times.
2. Give a history of the economic activities of individuals, carefully bringing out their nature and growth.
3. What do you mean by the economic organization of society? Give a historical account of the development of the economic organization of the modern society.

EXAMINATION QUESTIONS

U. P. Inter. Arts

Trace the development of economic life through the various stages from the earliest to the modern times, giving briefly the characteristics of each stage of development. (1942)

Rajputana Inter. Com.

Explain why the pastoral stage permits a denser population than the hunting stage, but a less dense population than the agricultural stage. (1945)

⁴For a detailed discussion, see my *Economic and Constitutional Essays*.

CHAPTER 8

WHY DO WE STUDY ECONOMICS ?

The investigation of the conditions of wealth by Adam Smith and his successors has already resulted in the removal of monstrous delusions which a century ago profoundly affected the legislation of every civilised country to the inexpressible injury of the commonwealth of nations. The first fruits of Political Economy have been worth a million times the intellectual effort that has been bestowed upon the subject—*Walker.*

There are two possible reasons for the study of a subject. It may be studied merely for the sake of the pleasure and enlightenment that the study affords ; this object is called the 'light-bearing' or theoretical object. Or it may be studied with the object of deriving help in practical affairs of life ; this latter object is called the 'fruit bearing' or practical object.

The study of Economics has two-fold importance—theoretical as well as practical : in other words, it affords us pleasure as well as helps us in practical affairs of life. It is thus better than subjects like Philosophy which are only light-bearing.

§ 1. THEORETICAL ADVANTAGES OF ECONOMICS

The nature of economic study is such that anybody who takes to it is immensely benefited in more ways than one. Economics has aptly been described by Marshall as "an engine for the discovery of concrete truth"; and its student develops all the qualities which are necessary for this discovery. It, firstly, develops in the mind of its student logical efficiency and faculty of observation. Direct experimentation under laboratory conditions not being possible in this branch of knowledge—we cannot catch a man and subject him to certain economic forces to see what happens—economic laws are arrived at either by proceeding from broad truths regarding human behaviour, or by collecting facts through observation. The first method, known as deductive method, affords us a better view of man and matter. The second method, known as inductive method, makes us acute observers.

Again, the data that a student of Economics has to handle are so enormous and of so varying importance that he has to pick out of them the relevant facts and to set apart the irrelevant facts. Economics thus develops the faculty of judging the comparative importance of various considerations without any mechanical assistance, a quality which is of very great value.

Apart from these qualities which a student of Economics acquires, he is also benefited by an increase in the total stock of his knowledge, and a clear insight into the complicated economic mechanism of which he constitutes a limb. Economics relates to him the detailed story of the *consumption* of wealth ; how this wealth is produced and what are the factors that contribute to increased production ; how exchange takes place and what fixes the value or price of any commodity ; how wealth is distributed and incomes are earned and why is it that some are rich while others are poor. It seeks to show him what place he and his companions fill in the economic structure of the nation, how the firm by whom they are employed functions as a part of the business machine and how the industry of which that firm is a member is related to other industries, and how does it work in harmony with them for a common end.¹

¹Thomas, *Elements of Economics*, p. 19.

A study such as this provokes a sense of serious thought on matters of vital importance by throwing a flood of light on the different parts of the economic system to which we are all linked.

§ 2. PRACTICAL ADVANTAGES OF ECONOMICS

Economics is useful not only from the point of view of theory but also from the point of view of practice.² Though it is still a matter of dispute among economic authorities whether Economics can issue rules and regulations for guidance in practical life or not, large majority of economists definitely believes that the practical value of Economics is supreme.

The study of Economics is so many-sided and so vast that it throws light on a surprisingly large number of practical aspects of human life. It affords practical guidance to householders and businessmen, labourers and capitalists, reformers and statesmen alike. Besides being of much practical importance to individuals, it is of great benefit to the society as a whole.

UTILITY OF ECONOMICS TO INDIVIDUALS

Utility to Householders

Let us start from the house which is the most familiar place to each and all of us. If we think little carefully, we will find that Economics is of undeniable benefit in the conduct of household economy. It suggests to the householder the broad principles by following which he can get maximum return out of his expenditure. It offers to his consideration the Law of Equi-Marginal Utility which directs him to spend his money in such a way that the utility of the last unit of money spent on each of the various heads may be almost equal; for by following this rule, he can derive maximum benefit out of his expenditure. Similarly, Economics emphasises the wisdom of keeping proper family budgets which show whether expenditure over various item is being done prudently or not. For instance, a man may be spending freely on intoxicating liquors and drugs or on cinema shows and the like, and this expenditure may be so disproportionately large that inadequate amount may be left to take care of other important items of expenditure like food, clothing and shelter. In such a case the heavy item standing against intoxicants or the cinema shows will suggest that life can be made richer and fuller by diverting this expenditure to other more important heads.

Utility to Businessmen

Let us now pass on from the household to the business field and see how Economics is useful to businessmen. In a narrow sense Economics is the science of which business is the art. Economics is, therefore, important for the businessman just as knowledge of law is important to a lawyer and knowledge of medical science to a doctor. The study of Economics, moreover, imparts a habit of thought and a familiarity with concepts invaluable to the man in big business, who to be successful must have a deep comprehension of principles involving a net work of mutually dependent phenomena. The solution of various business problems requires a profound knowledge of economic principles. Some of the most careful students of Economics have been famous business magnates.³

²"Economic Science is chiefly valuable neither as an intellectual gymnastics, nor even as a means of winning truth for its own sake, but as a handmaid of ethics and a servant of practice." Pigou, in *Nemoriam: Marshall Memorials of Alfred Marshall*, p. 81

³See Turner, *Introduction to Economics*.

To give a few examples, the subject of the methods of wage payment makes a thorough study of the technique, advantages and disadvantages of the various methods in existence and then suggests which method is suited under which circumstances. This study is of profound significance to businessmen. Rationalization, scientific managements, large scale production, division of labour are other subjects of the same nature and their accurate knowledge enables businessmen to avoid pitfalls and follow the best course.

Professional men, like doctors, professors and lawyers, also benefit from Economics in various ways. Economics solves their very important problem of devising method for increasing their income? This can be done, Economics teaches them, by increasing efficiency ; and it also states the ways and means of increasing the efficiency.

Utility to Labourers

Even such a simple man as a labourer can profit from the study of Economics. Economics tells him the reason why he gets a *particular amount* as wages, neither more nor less ; and how can that amount be increased. It communicates to him the correct picture of his contribution to the economic system and if also his wages are proportionate to that contribution. At the same time it also makes him realize the importance of the part the *entrepreneur* plays in economic life. Thus, while it encourages him to claim his proper remuneration, it also leads him to appreciate the position of his employer, so that his demands may not be unfair. The study of causes, effects and remedies of strikes and lock-outs and the history of trade unions are likely to save a country from uncalled-for and unreasonable interruptions in the otherwise smooth running of the economic system.

Utility to Statesmen

If Economics is useful to ordinary labourers, it is no less beneficial to statesmen. It apprises the practical politician of the current economic problems and also suggests their correct solutions. Politicians make them the political issues of the day, the staples of their activity. There is, however, one distinct field of Economics, called Public Finance, where the debt due by the statesmen to Economics is undeniably heavy. Economics teaches the statesmen the ways and means of running the finances of the Government, and the methods of solving the financial problems as and when they arise, the problems which rank supreme in the modern days of increasing State expenditure.

Utility to Social Reformers

Social reformer is the first cousin to the practical statesman and joins him in his indebtedness to Economics. Social reformers have one main aim, *viz.*, to increase the welfare of society. Economics which studies how social welfare can be increased through material means, is as such of great help to them. Many of the economic issues can be solved, to a fair degree, by social reform movement. Such issues take the form of social problems and fittingly occupy the attention of social reformers. For instance, India is facing today the problem of over-population. If social reformers start a movement in favour of the reduction of population through the exercise of self-control and the use of contraceptives and birth control devices, much good can be done. On many social problems, as for example, caste system, joint family system, and female and infantile mortality, Economics has much to say and recommend. Social reformers accept the findings of Economics in such cases and base their actions on them.

UTILITY OF ECONOMICS TO SOCIETY

Economics also contributes to the welfare of the society as a whole, just as it augments the welfare of its each member.

Individuals are members of the society, and their actions affect the society, favourably or adversely. Economics carefully studies these individual actions which are injurious to the society as a whole and recommends the methods of their prevention. The problem of luxury is an example of this nature. Similar is the case with drinking. If a man is a habitual drunkard, he not only spoils his own moral and reduces his own efficiency, but he also passes on this evil to others. Economics by its salutary recommendations for preventing this injurious habit, does immense good to the society.

There are, then, certain economic issues which are of direct interest to the society. The problems of free trade *vs.* protection, incidence of taxation, gold exports, the development of cottage industries and the like, affect the society as a whole. Economics carefully studies these problems in the light of social welfare and gives its unbiased opinion. Since the most notable trend of modern politics has become the suppression of the Individual by the State, this being the key-note of Socialism, Fascism and Planned Capitalistic Economy, socio-economic problems are fast increasing in number and urgency.

There are, indeed, some very important social problems to which Economics has to address itself. Of all such problems, the problem of poverty is the most stupendous and the most weighty. "The conditions which surround extreme poverty, especially in densely crowded places, tend to deaden the higher faculties. Those who have been called the *Residuum* of our large towns have little opportunity for friendship ; they know nothing of the decencies and the quiet, and very little even of the unity of family life ; and religion often fails to teach them...And in addition to the *Residuum*, there are vast numbers of people both in town and country who are brought up with insufficient food, clothing, and house-room, whose education is broken off early in order that they may go to work for wages ; who thenceforth are engaged during long hours in exhausting toil with imperfectly nourished bodies, and have, therefore, no chance of developing their higher mental faculties.....Their poverty is a great and almost unmixed evil to them. Even when they are well, their weariness often amounts to pain, while their pleasures are few ; and when sickness comes, the suffering caused by poverty increases tenfold."⁴ It is broadly true that 'the destruction of the poor is their poverty'. Economics by studying the causes of poverty and suggesting methods of their removal, does real service to a large part of mankind.

§ 3. IMPORTANCE OF THE STUDY OF ECONOMICS IN INDIA

To us in India, the study of Economics is pregnant with great possibilities. Ours is a poor country ; the income per head of our people is among the lowest in the world. But our productive resources are immense ; they can make us several times richer than what we are today. Why should, then, we be so poor ? This fundamental problem belongs to the domain of Economics and it is for our economists to find out the ways and means of making the country prosperous and well-to-do.

The problem of Indian poverty is a wide and important issue. There are several other problems of economic character which await analysis and solution. Should we have a free trade policy or a protectionist programme ? Should we revive cottage industries ; and if so, to what extent ? Should we export our gold ? Should we enforce the prohibition policy ? Should we allow foreign capitalists to start factories in this

⁴Marshall, *Principles of Economics*, pp. 2-3.

country ? These are only a few of the long list of vital problems of India, which require a comprehensive, up-to-date and sound knowledge of economic principles and practices for their solution.

TEST QUESTIONS

1. What are the theoretical advantages of the study of Economics ?
2. Is Economics a fruit-bearing science ? Show how.
3. What is the importance of the study of Economics in India ? Discuss fully.
4. Is a study of Economics useful to a businessman ? If so, how ?

EXAMINATION QUESTIONS

U. P. Inter. Arts

1. What is Economics ? How far is the study of Economics helpful in practical life ? (1932, 1939)

U. P. Inter. Com.

1. 'Study of Economics is a suitable preparation for a business career.' Explain. (U. P. Com., 1945)
2., Discuss the value of the knowledge of Economics for a businessman. (U. P. Com., 1943)
3. Discuss the value of Economics as a preparation for a business career. (U. P. Com., 1937)

Rajputana Inter. Arts.

1. Discuss the subject-matter of Economics, and write a note on the importance of the study of Economics with special reference to Indian conditions. (Raj., 1948)

Rajputana Inter. Com.

1. Discuss the subject-matter and scope of Economics. How far is Economics useful in the solution of practical problems ? Give Indian examples. (1940)

Other Examination Questions

1. Discuss briefly the importance and practical utility of the study of Economics. How can you justify the study of Economics ? (Punjab, 1933)
2. What is Economics ? Why have you taken up the study of this subject ? (Delhi Inter. Arts, 1939)
3. Explain the nature of Economic Laws, and show how "Economics does not give us conclusions directly applicable to policy," (Bombay Inter. Com., 1939)
4. What is the practical value of the study of Economics ? Do you consider that Economics should be one of the compulsory subjects for a University course of study in India ? (Andhra, Inter. Arts, 1944)

CHAPTER 9

SOME BASIC TERMS

In common use almost every word has many shades of meaning, and therefore needs to be interpreted by the context. And, as Bagehot has pointed out, even the most formal writers on economic science are compelled to follow this course; for otherwise they would not have enough words at their disposal.
—Marshall

Every branch of study has some basic terms which are used in certain definite senses and which require explanation. Economics also has its basic terms. They will be defined and explained in their appropriate places. Here we shall explain the following five terms only : Utility, Value, Price, Goods and Wealth.

§ 1. UTILITY, VALUE AND PRICE

Utility

If we look to our belongings, we will find that all the things we possess satisfy some want or the other. If they did not have this attribute, we will not care to possess them. *The capacity of a commodity to satisfy human want or wants, is known as its utility.* Pencils and cigarettes, books and newspapers, intoxicating liquors and drugs, *charas* and *bhang*, chairs and tables, all satisfy human wants and have utility.

Sometimes the above statement arouses a question from the reader : How can such useless and harmful things as intoxicating liquors and drugs, *bhang* and cigarettes, have any utility ? The objection is the result of a confusion between utility and usefulness. Utility has nothing to do with usefulness or otherwise. Utility is simply the capacity of a commodity to satisfy *some* human want, good or bad. The satisfaction of that want may produce good result or cause injury ; that is not a material point at all. An intoxicant satisfies a harmful want ; while a medicine satisfies a useful want. But since each of them does satisfy *some* human want, it possesses utility. An article "may give pleasure or it may prevent pain ; it may satisfy hunger or thirst or merely man's desire to have pleasing articles around him in his home ; it may make its possessor neat and clean or it may render him drunk or helpless. So long as it ministers to some desire of mind or body, it possesses utility in the economic sense, although the object of desire may be pernicious in its effect on the possessor or on others, or detrimental to the community generally".¹

Utility, then, is the *want-satisfying power* of an article ; and whether the utility of an article is great or small, depends upon the greater or less urgency of the want it satisfies. Suppose a man crossing a desert is very thirsty, so much so that unless he gets a cup of water he would die. The intensity of his want for water in this case is very great, and therefore the utility of water is correspondingly considerable. But suppose, our friend, the travellet, is not in a desert but is in his own comfortable house and is feeling slightly thirsty ; his want for water is not urgent in this case and, therefore, its utility to him will be little. This example also illustrates the fact that the utility of an article is variable and not fixed.

Utility, it should be remembered, is not inherent in a commodity. It is, on the other hand, the relationship existing between the consumer and the commodity. In

¹S. E. Thomas, *Elements of Economics*.

the above example water remains the same in both the places, the desert and the house; but its utility is great in the one case and very small in the other. Why? Because the relationship between the consumer and the water is different in the two cases. Again take the case of sand. When lying in a desert, it has no utility; but when brought to the plains to be used in the constructions of buildings, it comes to possess utility. The inherent characteristics and composition of sand do not change; but still it does or does not have utility according to external circumstances. It follows, therefore, that utility does not depend upon the internal characteristics of an article but on the external circumstances—the relation between the consumer and the article in question.

Value

*Value is the power of a commodity to command other commodities in its exchange.*² Briefly, value is power of exchange. You can exchange a rupee coin for pens or pencils or fruits; and all these can be exchanged for money. They all possess value. But sun's rays cannot be exchanged for anything since they are plentiful and free. As such; they do not have any value.

Value of an article is measured by the articles which can be had in exchange for it. For instance, if one *tola* of gold exchanges for 50 *tolas* of silver, gold is 50 times as *valuable* as silver, or the value of silver is 1/50th of that of gold. Value expresses the relationship between two commodities, and depends, like utility, upon external circumstances. The value of an article is not determined by its intrinsic characteristics.

An article possessing utility may or may not possess value. For instance, sun's rays, moon-shine and rain water possess immense utility but they are so abundant and free that nobody has to pay anything for them. As such, they have no value. But no article can have value unless it has utility; for nobody will like to pay anything in exchange for a commodity which cannot satisfy any of his wants and is, therefore, absolutely useless.³

Price

We have defined value as the capacity of a commodity to command other commodities in its exchange. The practice of exchanging one article for another article is known as *barter*, which has now become almost a thing of the past. Today most of the articles are exchanged for money. The amount of money for which an article exchanges is known as its *price*. In other words, value expressed in terms of money is known as price. As Mofeland observed, "Price is simply a short way of expressing the

²Value of a thing simply means the quantity of some other thing for which it is exchanged. Thus value is a relative term, and implies that one thing is compared to another; if there were only one thing in the world, the idea of value could not exist because no exchange could be possible.—Moreland Op.Cit., pp. 15-16.

³Value in-use and Value-in-exchange. Some economists use the word 'value' in a slightly different sense. According to them value is divisible into (1) value-in-use and (2) value-in-exchange. Value-in-use is said to convey the same sense which utility does; in other words, it means the capacity of a commodity to satisfy some human want. Value-in-exchange, on the other hand, is said to convey the sense which the term value does in the above classification; in other words, it means the capacity of a commodity to command other commodities in its exchange.

The use of the term value-in-use and value-in-exchange has been largely given up by modern economists. They use the terms *utility* and *value* respectively, instead. Students should, therefore, remember that when the word *value* is used without any addition to it, it signifies *value-in-exchange*.

"The word *value*," Adam Smith wrote, "has two different meanings, and sometimes expresses the utility of some particular object and sometimes the power of purchasing other goods which the possession of that object conveys". But says Marshall, experience has shown that it is not well to use the word in the former sense. See Marshall, *Economics of Industry*, p. 89.

value of a thing in terms of money : to say 'the price of *ghee* is one seer per rupee,' is precisely the same as to say 'the value of one seer of *ghee* is one rupee.'⁴

§ 2. GOODS

Meaning

If you just look around you, you will find yourself surrounded with a large number of things which satisfy your some desire or the other. The chair on which you sit, the table on which you keep your books, the shoes that you wear, the cigarette that you smoke and indeed even the sunshine, beautiful scenes, and pleasant evenings that you enjoy—all satisfy your needs or desires. All these things, material or non-material, which satisfy the desires of human beings are called 'Goods.'

In everyday life, the term *goods* is used in the sense of *material possessions* of a man. But the word is also sometimes used in a broader sense as when we say it is a great good to a man to be able to find recreation in reading or music after his day's hard work is done. It is in this latter, the broader sense, that economists use the term *goods*.

Marshall defines *goods* as all those things that satisfy human wants. In other words, anything possessing utility is a 'good.' Goods include not only material and tangible things, like books, pencils, food and buildings ; but also non-material and intangible things like love, affection and friendship.⁵

"Goods," therefore, is a wide term. Their essential nature can be made clearer by studying their various classes. Goods can be classified, (i) according to their material or non-material nature, (ii) according to their transferability or non-transferability and (iii) according to their being free or appropriated.

Material and Non-Material Goods

Goods may be *material* or *non-material* (i. e., personal). *Material goods* consist of useful material things and of all rights to hold or use, or derive benefits from material thing. They include physical gifts of Nature, land and water, air and climate ; the products of agriculture, mining, fishing and manufacture ; buildings, machinery and implements ; mortgages and other bonds ; shares in companies, patent rights and copyrights. Material goods are all external and can be transferred from person to person.

Non-material or personal goods are those intangible goods which have reference to a particular *person*. They may be (i) internal or (ii) external. Personal qualities and faculties of a man such as business ability, professional skill or the faculty of deriving recreation from reading and music, all these lie within himself and are called internal. The second class of non-material goods are called external because they consist of relation beneficial to him with other people. The chief instances of such relations beneficial to their owner are to be found in the goodwill and business connection of traders and professional men.⁶

⁴Moreland, *Op. Cit.*, p. 16.

⁵Prof. Pierson observes, "whether we can regard things as representing goods for us or not depends not only upon their own qualities, but also upon the extent of our knowledge, the stage of civilisation to which we have attained, the climate in which we live, our trades or occupations, the peculiarities of our tastes and even upon our age or the ages of those for whom we have to provide."—Pierson *Op. Cit.*, p. 47.

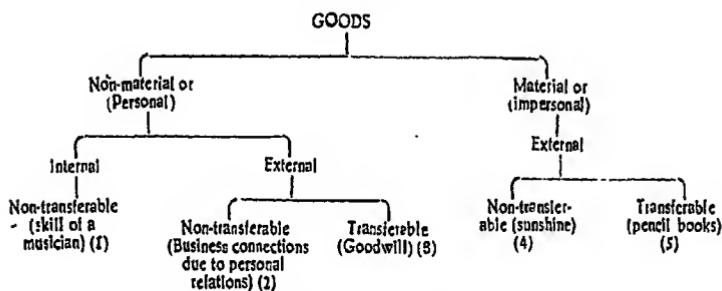
⁶Marshall, *Principles of Economics*, pp. 54-55.

Transferable and Non-transferable Goods

Another point of view from which goods can be classified is their transferable or non-transferable character. Transferable goods are those goods whose ownership can be transferred or changed. Books, pencils, buildings, good-will and the numerous other commodities of trade can be sold and belong to this class. Transferable things are not necessarily transportable; for instance, a house is transferable but not transportable. There are, however, certain desirable things which cannot be so transferred. Among the non-transferable goods are to be included a person's qualities and faculties for action and enjoyment (*i. e.*, his internal goods): also such *etc.* of business connections as depends upon personal trust in him and cannot be transferred; also the advantages of climate, light, air, etc.

Marshall's Classification of Goods

The classification of goods from the point of view of material and non material nature and their transferable and non-transferable character may be conveniently combined into one. Marshall has given the following classification from this point of view :



(It should be noted that material goods are always external; internal personal goods are absolutely non-transferable.)

Consumption and Production Goods

Goods which are consumed for the direct satisfaction of human wants are called consumption goods. The food we eat and the clothes we wear, the books we read and the house we live in, are all consumption goods. The goods which are used for further production of wealth are known as production goods. They produce things which may be used for consumption later; thus they satisfy human wants indirectly. The seeds sown in the fields and the raw materials used in a factory are the examples of production goods.⁷

Free (or Unappropriated) and Economic (or Appropriated) Goods

Some goods are so plentiful that they can be obtained without any payment; that

⁷Goods may be divided into (1) those which are wanted for themselves and so yield utility directly and (2) those which are not wanted for themselves and so yield utility only indirectly. Of the first class are clothes, furniture, food, and so forth. Of the second class are machines, factories and all instrumental goods as they may be called. The goods of the second class (indirect goods) derive their utility from the utility of the goods of the first class (direct goods) which they aid us in procuring—Chapman, *Elements of Economics*, p. 5.

is, they are *free*. Water, sunshine, air and heat are some of the examples. Free goods are not the result of human effort or sacrifice. Nature provides them in plenty for the use of human beings. That is why they are also called 'gratuitous goods' or 'Natural goods'. Free goods are unappropriated in the sense that they are not the private property of (or they do not belong to) any particular individual or individuals. Such goods have utility but not value.

There are, however, other goods which are limited in supply and which can be obtained only on payment. Books, pencils, houses, clothes and cycles are all economic goods. All the goods that are bought and sold come under this class. They are the results of human effort or sacrifice and are not the free gifts of Nature. Economic goods are appropriated goods in the sense that they belong to particular individuals. Such goods possess not only utility but also value. Economics is concerned with economic goods and not with free goods.

The land in its original state was a free gift of Nature. But in old and thickly populated countries of today, it has ceased to be a free good. Wood is still free in some Brazilian forests. The fish of the sea are generally free but some sea fisheries are jealously guarded for the exclusive use of the members of a particular nation. But wheat grown on free land and fish that have been acquired from free fisheries are not free, for they have been acquired by labour and are consequently sold for money.

§ 3. WEALTH

Meaning

Wealth may be briefly defined as consisting of all the goods that have value.⁸ Since such goods are known as economic goods 'wealth' and 'economic goods' have the same meaning. All the commodities which are bought and sold are wealth; those articles which are not bought and sold are definitely excluded from the category of wealth though they might possess immense utility. Air, light and heat have considerable utility; but since they have no value and are not bought and sold, they are not wealth.⁹ Wealth consists of all those articles which are exchangeable.

Characteristics of wealth

An article can have value and be called wealth only if it possesses three principal attributes, namely, utility, appropriability and scarcity.

(1) *Utility*. An article can have value only if it is capable of satisfying some human want; *i.e.* if it has utility. If a commodity cannot satisfy any want whatsoever of an individual, he will not care to spend money for acquiring it. In other words, it will have no value. Without utility, no article can become wealth.

(2) *Appropriability or Transferability*. In order to be classed as wealth an article must be apptopriable, that is, it must be capable of being made the property of somebody. That nobody will spend money or do some sacrifice for the acquisition of an object which he cannot call his own, is simple commonsense. Appropriability, as such, is an essential attribute of wealth. It implies transferability. Only transferable goods can have value and can become wealth. No man will care to pay a price for the moon, sun and stars since they cannot be transferred to him. Things like air and sunshine possess great utility and yet are not counted as wealth. They fail in the second point

⁸If an article possesses only utility, it is called a good. If it also possesses value, it is called economic good or wealth.

⁹The term 'wealth' is made to mean different things by different economists. For an interesting account, See J. K. Mehta, *Groundwork of Economics*, Ch. I.

of definition, they are supplied freely by nature to each and all, and are not capable of being appropriated and exchanged.*

(3) **Scarcity.** No article can have value unless it is limited in supply, i.e., it is scarce. Scarcity signifies the excess of demand over supply. If a thing is so plentiful that its supply exceeds the demand for it, it can be obtained without any payment: it will have no value and will not be classed as wealth.

To sum up, an article can have value only if it has utility, is scarce and can be appropriated. Since wealth consists of those goods which have value, utility, scarcity and appropriability may well be called attributes of wealth.¹⁰

Marshall's Conception of Wealth

According to Marshall, wealth consists of two classes of goods:

(1) Those material goods to which a person has private rights of property and which are, therefore, transferable and exchangeable. These, it will be remembered, will include not only such things as land and houses, furniture and machinery, but also shares in companies, debentures, etc.

(2) Those immaterial goods which belong to him, are external to him and serve directly as the means of enabling him to acquire material goods. Thus it excludes all personal qualities and faculties, even those which enable him to earn his living; because they are internal. Wealth is thus used in the sense of economic goods.

If you turn to the chart given on page 67 above, you will find that only third and fifth classes of goods come under wealth.

Ruskin's View

Ruskin was a valiant critic of the material nature of Economics as was the case in his times. The material definition of wealth, namely, that it consists of all the desirable things that have value, did not agree with him. According to him, "There is no wealth but life: Life including all its powers of love of joy and admiration." Happiness, capacity to love and ability to admire things of art, were, in his opinion, real wealth.

Let us examine Ruskin's contention. The qualities mentioned by him are certainly desirable; hence they are goods. But since they have no value, though they have a high degree of utility, they cannot be regarded as economic goods or wealth. As such the use of the word wealth in the above quotation is wrong.

What Ruskin really meant was that economists should change their definition of wealth so as to include in it the qualities mentioned by him. But we cannot do this since these qualities cannot be measured by the measuring rod of economists, namely, money; and what cannot be thus measured, has per force, to be excluded from our scope.

However, the nature of Economics has much changed since Ruskin wrote. Welfare, normative concepts, ethical problems and other like topics are now discussed by economists. Had Ruskin been alive today, he would not have probably made this criticism, at least not so bitterly.

*Hall, *Elements of Political Economy*, p. 3.

¹⁰Wealth should be distinguished from Capital and Income. Capital is that part of wealth which is used for further production. Income is a periodical flow from capital. "The capital of an individual or a community is an amount of wealth in existence at a particular moment. The income of an individual or a community is an amount of wealth obtained during a specified period. Capital is being constantly converted into income and income into capital, but capital, under all times and conditions, is measured as a quantity while income is more properly measured as a rate. Capital is a static conception independent of time; income is a dynamic conception involving time element."

Classification of Wealth

Wealth may be classified into, (i) personal wealth, (ii) collective wealth, (iii) national wealth and (iv) international wealth.

(i) *Personal or Private Wealth.* Personal wealth is the wealth which belongs to a certain person. The above conception of wealth as given by Marshall is that of personal wealth. It includes those economic goods which belong to him and which he can sell. Associations of persons, companies and clubs, etc., are usually counted as individuals and the wealth belonging to them as personal wealth.¹¹

(ii) *Collective or Communal Wealth.* The wealth owned by Municipal Boards or Provincial and Central Governments is known as collective or communal or social wealth. Public libraries, public parks, roads and harbours are good examples of collective wealth. Municipal and Government bodies represent the community and the wealth owned by them may be regarded as wealth collectively owned by the citizens; hence the name *communal or collective wealth*.

(iii) *National Wealth.* The term *national wealth* is still wider and includes the following items :—

- (1) *Personal Wealth* of all the members of the nation.
- (2) *Collective wealth* of the nation.
- (3) *Natural advantages* possessed by a country, e. g., climate, geographical position and mineral resources ; and
- (4) *Non-material elements* like characteristics of the members of the nation, and goodwill and reputation of the country.

Students may raise an objection : How can natural advantages and non-material elements (in 3 and 4 above) be regarded as wealth, since they cannot be bought and sold ? This objection is plausible, but it is met by suggesting that the term wealth is used here in a broad sense.

(iv) *Cosmopolitan or International Wealth.* Cosmopolitan wealth includes the wealth belonging to all the nations of the world plus the wealth shared by all of them in common, as for example, oceans, scientific knowledge, mechanical inventions etc.

The following diagram illustrates the above classification of wealth :

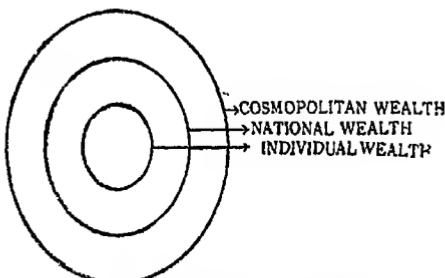


Fig. 7. Explaining the classification of wealth.

(Note : National wealth includes individual wealth and collective wealth.)

¹¹The debts which an individual owes to others may be regarded as his *negative wealth* and they must be subtracted from his gross possessions to arrive at his true *net wealth*.

Is Personal Skill Wealth ?

Personal skill should or should not be considered as wealth, is a question which very often confuses students. Let us take the case of a surgeon's skill and decide whether it should be counted as the wealth of the surgeon or not. Now, this skill is not transferable, although the service which it can render is, of course, transferable. Hence this *personal skill is not wealth*, though the service it gives rise to is wealth. Everybody attaches great value to sunshine; but still sunshine does not possess value in an economic sense—it cannot be bought and sold, and consequently it is not called wealth. The same reasoning applies to personal skill.

But the surgeon himself attaches high value to it, and may, in fact, guard against its loss by insuring his hands or eye-sight. Such skill is, therefore, regarded by some economists as *personal wealth*. But strictly speaking this reasoning is fallacious.

Similar reasoning applies to the skill of an engineer, the melodious voice of a songstress, the strength of a wrestler and the nimble fingers of an embroidery worker.*

TEST QUESTIONS

1. What do you mean by *Utility*? Discuss fully.
2. Define value and price. Distinguish between value-in-use and value-in-exchange.
3. What do you mean by goods? What is the meaning of 'economic goods'? Give Marshall's classification of goods.
4. Give the various classes of goods.
5. What do you mean by wealth? What are its characteristics?
6. Give a classification of wealth.
7. Are slaves wealth? Will the abolition of slavery prevalent in a country diminish wealth?
8. Most goods after being sold to consumers can be resold only at a lower price: they are "second hand." Does the fall in selling value indicate a decline in the wealth of the community?

EXAMINATION QUESTIONS

U. P. Inter. Arts

1. Distinguish between individual and social wealth and state what do you mean by 'economic goods'. (U. P., 1925)

Rajputana Inter. Arts

1. Define wealth. Discuss whether or not the following come under your definition: (a) natural resources of a country, (b) sunshine, (c) a musical voice, (d) B. A. degree, (e) copyright. Give reasons. (Rajputana, 1928)
2. Explain clearly the meaning which is attached to the word 'Wealth' in Economics. If you were asked to calculate the wealth of India, what items would you take into account in your computation? (Rajputana, 1931)

Rajputana I. Com. Exam.

1. Define wealth, and fully explain the notion of wealth as it is understood in Economics. (1941)

"The term 'Personal wealth' has been applied to distinguish this but although clearly a point to be noted, yet the use of the word wealth without an adjective to qualify it is generally held to include only those things external to the individual and to exclude his personal energies and abilities." Hall, *Elements of Political Economy*.

[These are reflective questions: They are interesting as well as contributory to clearer understanding. They can be answered only after the subject has been properly and thoroughly grasped.]

Other Examination Questions

1. Define wealth and attempt its classification from different points of view. (Punjab, 1930)
2. "There is no wealth but life. Life including all its powers of love of joy and of admiration." —Ruskin

Do you agree with Ruskin's definition of Wealth? Distinguish between Wealth, Capital and Income. (Delhi, 1938)

3. "Utility and scarcity, and these alone are necessary to give things value." Comment on this statement. (Delhi, 1929)
4. Are the following wealth:—
 - (a) Good health.
 - (b) A picture which nobody appreciates.
 - (c) The services of a doctor who fails to cure the patient?

Give reasons for your answer in each case. (Bombay Com., 1939)

CONSUMPTION

The chief interest of Political Economy to the ordinary reader, its chief value to the student of history, must be in the explanation it affords of the advance of the decline in the productive power of nations and communities; and it is only in the consumption of wealth that we find the reasons for the rise of some and the fall of others, from age to age.

—F. A. Walker

[CHAPTERS : 10. *Meaning and Importance of Consumption.* 11. *Wants.* 12. *Classification of Wants.* 13. *The Law of Diminishing Utility.* 14. *Marginal and Total Utility.* 15. *The Law of Equi-marginal Utility.* 16. *Consumer's Surplus.* 17. *The Standard of Living.* 18. *Family Budgets.* 19. *Practical Work on Family Budgets.* 20. *Income, Spending and Saving.* 21. *Social Aspect of Spending.* 22. *Luxuries and Waste.*]

CHAPTER 10

MEANING AND IMPORTANCE OF CONSUMPTION

The consumption of wealth is, in its only important form, a phenomenon which cannot be separated from the production of wealth.—*Charbutius*

§ 1. MEANING OF CONSUMPTION

Human beings feel numerous wants which press for satisfaction with varying intensity. Some wants are primary and, therefore, very urgent, like the want for food, clothes and shelter; while there are other wants which are not so urgent, as for example the want for joy-rides and costly dresses. Whatever the nature of wants, they come up for satisfaction, sooner or later. Men satisfy these wants by the use of wealth. When they are hungry, they appease their hunger by taking food; when thirsty, they quench their thirst by drinking water or orange syrup. The application of wealth for the direct satisfaction of wants is known as consumption.

Wealth, it may be emphasised, may be applied for the satisfaction of wants directly or indirectly. If you are thirsty and drink a glass of water, or if you are hungry and take a few biscuits, you satisfy your wants directly; the application of wealth in these cases will be called *consumption*. But when you sow seeds in the field and burn coal in the factory, wealth is used for the satisfaction of wants only ultimately; immediately it is applied for the production of agricultural stuffs and manufactured articles. In such cases, then, the commodities used lead up to the satisfaction of wants only indirectly. Such indirect use of wealth for the satisfaction of wants is known as *production* and not *consumption*.

A pertinent question may be asked at this stage: What happens of an article when it is consumed? When you eat a biscuit, what happens of it? A layman may probably say that it is *destroyed*. But scientists tell us that matter is indestructible; hence the above answer is not correct. When we eat a biscuit, it is not destroyed but is simply converted into blood and foreign matter—it is disarranged and loses its utility as a biscuit. It is the utility of the biscuit which is destroyed and not the biscuit itself. We can, therefore, define *consumption* as the *destruction of utilities for the direct satisfaction of human wants*. (The reader must not make the wrong statement that *consumption* means the destruction of matter; it refers to the destruction of utility.)

Marshall regards consumptions as *negative production*. Just as the production of material products, says he, is really nothing more than a rearrangement of matter which gives it new utilities; so the consumption of them is nothing more than a disarrangement of matter, which lessens or destroys its utilities.¹

From the above definition it is clear that the scope of the term "consumption" is fairly wide. The actual eating of a thing is, of course, consumption; but the wearing of clothes, the riding of a horse, the reading of books, the writing on a piece of paper, the ringing of a bell, are also acts of consumption, since utility is destroyed or lessened in each of these cases. Very often when a man is said to consume things he does nothing more than to hold them for his use, while, as Senior says, they "are destroyed by those numerous gradual agents which we call collectively time."² Pictures

¹Men do not consume matter, but only utilize; that is to say, the amount of matter present in the world is not diminished by the act of consumption, but some of it is no longer capable of satisfying a particular want.—Moreland. *An Introduction to Economics*, p. 20.

²Marshall, *Principles of Economics*.

and curtains may thus be consumed by the passage or effluxion of time, even without being touched by their consumers.

Other Meanings of the Term 'Consumption'

The word "consumption" is a word of daily usage and conveys several senses. In ordinary talk, 'consumption' is sometimes used in the narrow sense of eating; and at others, in the wider sense of destruction. Again, in the science of medicines, consumption is another name for tuberculosis. The sense in which this term is used in Economics is easily distinguishable from its foregoing conceptions. Consumption, in the economic sense, is much wider than mere eating. It also differs from destruction in a basic sense. When an article is 'destroyed' it does not satisfy a want; while 'consumption' always involves the satisfaction of some want or the other. If a coat is 'destroyed' by fire, it does not satisfy human want during the course of its destruction; but if it is 'consumed' by constant wearing, it satisfies a vital human want for clothing. Moreover, the expression 'destruction of goods' is open to objection inasmuch as matter cannot be destroyed, the term 'consumption' has no such draw-back. Finally, consumption in economic sense has nothing to do with tuberculosis.

Consumption as a Division of Economics

We have explained above the act of consumption in the economic sense. Consumption is also a department of Economics, and should be distinguished from the act of consumption. In the department of Economics known as Consumption, we study wants, their origin and satisfaction, the laws governing their satisfaction etc. The department of Consumption centres round the act of consumption.

Kinds of Consumption

(1) *Slow and Quick Consumption.* The act of consumption may be slow or quick. When you drink a glass of water, the act of consumption comes to a speedy end, and is *quick*. But when you purchase a new shirt, you wear it for months together before its utility is completely destroyed. The extraction of satisfaction out of a shirt is diffused over a long time. The act of consumption in this case is continued and *slow*.

Articles subject to quick consumption are known as *perishable goods*. Water, mangoes, apples, fish and such other articles are perishable goods. Their utility is destroyed in the very first act of their consumption. The articles subject to slow consumptions are known as *durable goods*. The house, the typewriting machine, the book, the cloth, the electric bulb, are all durable goods. They yield repeated satisfaction.

(2) *Productive and Final Consumption.* Some older economists divided consumption into productive consumption and final consumption. The application of goods for the creation of utilities (i.e., for production) is called by them *productive consumption*. Productive consumption in this sense leads to indirect satisfaction of wants. The application of wealth for the direct satisfaction of wants is called by them *final consumption*. If some bricks are used in the construction of a factory meant for producing certain articles, their consumption will be called productive consumption. But if they are used in the construction of a residential house, their consumption will be final consumption.

Modern economist have, however, given up the use of these two terms. They define the term consumption in the sense in which we have defined it, namely, the application of wealth for the direct satisfaction of wants. The so-called productive consumption, i.e., the application of wealth for indirect satisfaction of wants, is, in

their opinion, not consumption at all ; strictly speaking it is production. Consumption is a term which is now restricted to the so-called final consumption.³

§ 2. IMPORTANCE OF CONSUMPTION

Consumption is a New Subject

Consumption as a separate subject was born only a few decades ago. Early economists did not study consumption and rarely made it a department of Economics. Ricardo, Mill and other old economists centred their attention on production which, in their opinion, was the most important department of Economics, and neglected consumption which they thought, was the concern of private individuals.⁴ It was left to Marshall to detect this mistake of omission on the part of his predecessors and to lay emphasis on the importance and utility of the study of consumption, so much so that it is now regarded as the key-note of Economics.

Earlier economists neglected the study of consumption not merely because they did not want to write anything on it but because they could not do so for two very pertinent reasons. Firstly, their study of wants and the allied topics was not thorough and they could not, therefore, make a full study of consumption. Secondly, the relationship between the consumption of wealth and welfare was not much appreciated in the days gone by, and under such circumstances consumption could not come to the forefront. As time rolled on, the scientific study of such psychological phenomena as wants and satisfaction ripened, and the relationship of welfare with consumption became prominent, while the growth of humanitarian spirit led to a comprehensive and penetrating inquiry into the causes of welfare. The result was that consumption began to be studied. And today it is considered to be the most important department of Economics. Indeed, some economists seriously think that consumption has been given a disproportionately large importance.

Importance of Consumption in Economics

Consumption now occupies a very important place in the science of Economics. *It is, in fact, the beginning and end of Economics.* Human beings undertake economic activities merely because they have wants which call for satisfaction. It is the existence of wants and need of their satisfaction which lead to economic efforts. Human wants constitute the mainspring which sets all the economic forces to work. Consumption is, as such, the starting point in Economics. Again, all economic activities are undergone with one ultimate purpose, namely, the satisfaction of wants. The production, exchange and distribution of wealth have only this one final aim. Consumption may, as such, be also considered to be the end of Economics. It is that significant point from which the circle of economic activities makes a start and at which it reaches completeness. Consumption is, therefore, rightly regarded as the goal of economic activities as well as their starting point.

Again, the national welfare and prosperity are very much dependent on the nature of the consumption of the inhabitants. Other things remaining the same, the more voluminous the consumption, the greater is the prosperity. But the composition of the articles consumed is a very important matter. If the articles

³There is also what Riedel calls "Immaterial consumption" as when a utility disappears, either because the want itself to which it ministers disappears or because the views have changed as to the means to be employed towards its satisfaction.

⁴I cannot but deem it a subject of much regret that the fascination of the mathematical treatment of economic questions, and the ambition to make Political Economy an exact science, should have led to the practical excision of the whole department of Consumption.—Walker, *Political Economy*.

are wisely selected and are healthful, the progress of the individuals and the country is certain. But in the absence of wise expenditure, no amount of richness can bring the real happiness and progress. It is easy to earn money than to spend it properly. The study of consumption is, as such, pregnant with great possibilities.

Production vs. Consumption

Since consumption is the beginning of Economics, it is described before production in almost all the modern books on Economics. Some old economists gave the first place to Production ; because, they said, no consumption is possible unless wealth is produced ; and production should, therefore, be treated first. But this is a weak argument and can be met by a counter-argument that wealth is produced for consumption and no wealth will be produced if it will not be consumed. Hence consumption should be treated prior to production. The fact remains that consumption is the beginning and end of Economics and should, therefore, have the priority of treatment.

Practical Advantages of the Study of Consumption.

Consumption is important not only in theory but also in practice, which can best be illustrated by a few examples.

Its Importance to Statesmen. Statesmen, who are engaged in practical problems, very well realize the importance of consumption. Efficiency in the production, exchange and distribution of wealth will not achieve anything unless the consumption of wealth is such that the efficiency of labourers can be maintained. Again, the statesmen have to see that citizens spend their money wisely. Prosperity depends not so much upon opulence as upon its proper use. The proper expenditure of money is more difficult than its earning. A man may produce considerable wealth and may be very rich ; but if he does not know the proper use of wealth, his richness is of no use. Suppose a man earns Rs. 100 per month and spends it very wisely and proportionately on the various heads of expenditure ; while there is another man who earns Rs. 200 per month, but who is addicted to drinking, cinema-going and such other habits, with the result that a proportionately large share of his income is spent on harmful objects and very little is obviously left to take care of his necessary requirements. On comparing the lives of both these men, we unmistakably find that the life of the first man is better than that of the second, because the latter does not know the secret of wise expenditure. By his habits, a bad consumer may injure not only himself but also others since bad habits are very infectious. Considerations such as these have unfailing bearing on the social life of the State. Governments have now become alive to the fact that if they want to make their subjects happy and flourishing, they must see that their expenditure is wise. The policy of prohibition of using intoxicating liquors and drugs and the entertainment tax on cinema shows and other like actions, have this end in view. Indeed, one will be half a statesman if he neglects the consumption side of the social life of his country.

Its Importance to Businessmen. The practical utility of the study of consumption can be proved by showing its importance to businessmen who are practical through and through. Businessmen frequently anticipate demand ; they have to estimate the extent of future consumption on the basis of the present trends of fashion and the past records. If their estimate comes out correct, their profits are large. But, if unluckily they somehow miscalculate demand and indulge on "over-production", i.e., production more than the demand, goods do not sell and much loss is incurred. A careful study of consumption is, thus, the foundation stone of business success.

Its Importance to Householders. To the householder, in particular, the study of consumption is very profitable. This study teaches him the principles by following which he can achieve maximum benefit out of his expenditure. The knowledge of the

law of equi-marginal utility and of family budgets enables him to spend money wisely and to achieve a gain in the satisfaction of his wants.

TEST QUESTIONS

1. Explain the meaning of consumption as clearly as possible.
2. What do you understand by slow and quick consumption and productive and final consumption ? Do modern economists recognize the concept of "productive consumption" ? Discuss fully.
3. Is Consumption an old branch of economics ? What is its Importance in Economics ?
4. "Consumption is the beginning and end of Economics." Discuss.
5. Show the practical importance of the study of consumption.
6. Are the following acts of consumption :
(a) The flying of a kite ; (b) the looking at a picture ; (c) the eating of a mango , (d) the painting of a landscape ; and (e) the polishing of shoes ?

EXAMINATION QUESTIONS

U. P. Board

1. What exactly do you mean by 'consumption' ? What is the relation between consumption and production ? (I. A., 1941, 1927.)
2. Clearly explain what do you understand by the term 'consumption' and give examples of the different types of consumption. Consumption is regarded by some as the goal of economic activity and by others as a means of restoring energy. Which view in your opinion is correct ? Give reasons. (I. A., 1932)
3. Define clearly the meaning of the term Consumption as used in Economics. What improvements can you suggest in the mode of consumption of an ordinary Indian peasant in your own part of the country. (I. A., 1931)

Rajputana Board

4. 'Satisfaction is the end of economic activities.' Explain this with reference to the importance of consumption as a subject of study in Economics. (I. A., 1931)

Other Examining Bodies

5. Is it correct to say that 'production' means production of matter and 'consumption' means consumption of matter ? If your answer is in the negative, give your own definitions of production and consumption which you think would be correct. (Punjab, I. A., 1929)
6. "Consumption has to do with spending and not with saving." Explain and show what meaning is attached to the term *Consumption* in Economics. (Delhi, I. A. 1940)

CHAPTER II

WANTS : THEIR DETERMINATION AND CHARACTERISTICS

For at least half his expenditure an ordinary individual does not know what he wants and out of the other half, for at least a half he does not get what he wants. It is only by becoming the creature of habit and the victim of mimicry or stimulation that he accomplishes very badly a task which is really more difficult than that of earning his income.—*Dibblee*.

§ 1. MEANING OF WANT

What is a "Want" ?

"Want" is a word with which the reader is very well familiar. If he is asked to give the equivalent word for 'want', it will most probably be 'desire'. In the ordinary language, 'want' and 'desire' are used in the same sense; but economists draw a fine distinction between them. The word 'desire' is used by them in the ordinary sense, namely, a conscious longing for a thing. But the term 'want' has special significance. Want is that desire which is backed by the ability and willingness to satisfy it. Suppose a man desires to have a book; he also possesses the money to purchase it; while he is willing to exchange the money for the book. In such a case, the desire is effective and will be called a 'want'. But suppose a poor man has the desire for a motor car, but he has no money to buy it. His desire is obviously ineffective, i.e., incapable of satisfaction, and cannot be called a *want*. Again, take the case of a miser who will be glad to see his little daughter wearing gold ornaments; he has enough money to purchase ornaments; but he may not like to part with money because of his greediness. In this case again, his desire is ineffective and cannot be called a *want*.¹

To sum up, there are three essentials of a want : (1) a desire for an article; (2) the ability to satisfy it; in other words the possession of the means of its satisfaction; and (3) the willingness to spare the means for the purpose. When a desire is backed by ability and willingness to satisfy it, it is called 'effective desire' or 'want.' In other words, want is that effective desire, for a particular thing which expresses itself in the effort or sacrifice necessary to obtain it.²

Importance of Wants in Economics

The study of wants is of great importance in Economics. Wants are the seeds which give rise to the tree of economic efforts. It is the feeling of certain wants that calls forth economic activities. That is the reason why production, exchange and distribution of wealth take place. When wants are satisfied, economic activities come to a natural conclusion. Wants, thus, constitute the point whence economic efforts begin and where they come to an end.

Wants are also important since they determine the standard of living of the people and their productive efficiency. A man whose wants are more and better satisfied than the other is more efficient, other things being equal. The number and variety of human wants normally satisfied constitute a good index of the material prosperity of a country.

¹Effective desire is also called *Demand*. Thus *wants* and *demand* come to have the same meaning. See in this connexion, J. K. Mehta, *Groundwork of Economics*.

²See Penson, *Economics of Everyday Life*, p. 14.

WANTS

§ 2. WANTS AND ECONOMIC ACTIVITIES

The Circle of Wants and Activities

Wants and economic activities are very closely related. We have already emphasised that wants lead to activities. Wants are the real motive force which set the entire economic mechanism into motion. The servant works because he has wants to satisfy; the shop-keeper maintains the shop so that he may earn money for the satisfaction of his wants; the lawyer argues cases, the teacher teaches students, the clerk works in office, the driver drives the car, with the same object, viz., the satisfaction of certain wants which press for satisfaction. If men cease to have wants, the entire economic machinery will come to a stand-still. That wants lead to activities is a well-established fact which does not require much deliberation.

Just as wants lead to activities, similarly activities, while satisfying the wants which cause them, lead to the creation of fresh wants.

In this manner, wants give rise to activities; the latter satisfy the old wants but give rise to new wants; the latter again lead to new activities; and so on. The circle of increasing wants and increasing activities has an indefinite course to run. It has a starting point but it has no end. Indeed it is this unending phenomenon of wants leading to activities and the activities leading to fresh want which has been the primary cause of the modern civilisation. For civilization consists in a multiplicity of wants and the ability to satisfy them.

Historical Illustration

During their initial abode on this planet, men early felt certain wants, which, they found, must be satisfied for keeping themselves alive. For this purpose they made efforts. Wants thus led to activities.

Fig. 8. Explaining the relation between wants and activities.

These activities were meant to harness the forces of Nature in the production of wealth, in a primitive sense in the earlier days, but in a more imposing way later on. These activities could be carried on efficiently only with certain implements or tools. For instance, if men wanted to kill animals for food, they required sharp stone weapons or arrows. If they wanted to pluck fruits, they sometimes felt the need of some missiles or bamboo poles. They began to feel the want for these articles which aided them in their economic activities. In this way activities led to the creation of fresh wants.

There is another sense also in which economic activities led to the creation of new wants. As man obtained control over Nature, he could satisfy his old wants in a limited time and began to have leisure. To occupy the latter, he invented new wants, which called forth fresh activities. If the leisure was spent in festivities, he felt wants for dainty dishes and other delicious things. If it was spent in inventing improved and imposing dress, he required cloth and other articles. Thus activities led to the creation of new wants. It is at this stage that the love of display and distinction springs up in human heart.*

*Senior remarks, "Strong as is the desire for variety, it is weak compared with the desire for distinction: a feeling which if we consider its universality and its constancy, that it affects all men and at all times, that it

Speaking broadly, therefore, although it is man's wants in the earliest stage of his development that give rise to his activities, yet afterwards each new step upwards is to be regarded rather as the development of new activities giving rise to new wants than that of new wants giving rise to new activities.⁴

This is the way in which wants and activities act and react on one another in a never-ending fashion. And the circle of wants and activities, which is the life-blood of economic progress, never comes to an end.

§ 3. DETERMINATION OF WANTS

Factors Governing Wants

The nature and intensity of human wants depend upon several factors, the chief of which are physical, physiological, ethical, social and habitual or customary.

(1) *Physical Factors.* Physical factors determine the character and the extent of wants to a considerable degree. The people of a cold country like England have to use woollen clothes all the year round and also to take some intoxicants to keep them active, but in a warm country like India, we require woollen clothes only during the winter, and light cotton clothes during the summer, while intoxicants are not only unnecessary but actually harmful to the constitution.

(2) *Physiological Factors.* In order to keep ourselves physically fit we have to take a diet which may supply all the elements like proteins and vitamins which are necessary for health and vitality. If a man is thin, milk may probably be useful to him ; but it will be injurious to a fat man because it will make him fatter still.

(3) *Ethical Factors.* The ethical and religious view-point lends its colour to the wants of a person. The nature of ethical ideals of a man and the degree of importance he attaches to them, determine his wants to a fairly large degree. If a man believes in the simplicity of life as an important associate of spiritual development, his wants may be very few and simple. But if, on the other hand, he considers the satisfaction of a large number of wants as the mark of progress, his wants will be numerous and complex.

(4) *Social Factors.* The wants of a person are determined not only by physical, physiological and ethical considerations, but also by the stage of general progress of society. The society, for instance, has set rules for the disposal of a dead body or for the performance of marriage. Members of the society instinctively respect such social rules and allow their wants to be moulded and fashioned by them almost unconsciously. The offer of *pan* and smoke to visitors, the burning of dead body among the Hindus and its burying among the Muslims, and such other things are all set by social rules. The dictates of society are governed by the stage of progress attained by it. The social commandments of a primitive society are elementary and sometimes without reason ; the dictates of an advanced society are refined and are based on reason.

(5) *Economic Factors.* Wants are largely determined by one's richness or poverty. A poor man has few and simple wants. He may satisfy those wants which support life, but he rarely gets an opportunity of enjoying comfortable and luxurious articles. This is not the case with the rich who allow their wants to multiply freely, with the result that their wants are numerous and mostly of comfortable and luxurious

comes with us from the cradle and never leaves us till we go into the grave, may be pronounced to be the most powerful of human passions." This great half-truth, comments Marshall, is well illustrated by a comparison of the desire for choice and various load with that for choice and various dress.—Marshall, *Economics of Industry*, pp. 56-57.

⁴Marshall, *Ibid.*

nature. It is due to the poverty of an Indian that his wants are so few and to the richness of an American that his wants are so numerous.

(6) *Habits, Customs and Fashion.* Personal habits of a man and the prevailing fashion have a great determining influence on wants. It is a fact which students will verify from their own experience that a man who has done a thing in a particular way tends to follow the line of least resistance and goes on doing it in the same way; and the more often he repeats the same, the less disposed he becomes towards change.⁵ The influence of personal habits on one's wants can, therefore, be clearly realized. Again, it is also a fact, borne out by experience, that a man who has to do a thing for the first time tends to do it in the same way as he sees his neighbours doing it. Thus a man who lives entirely alone will develop habits or customs and all the ordinary action of his life in his own ways, for instance, of preparing and taking food, of the cut of his clothings and of wearing them, etc. But as a rule man does not live alone and in ordinary life he follows the customs and habits of the people among whom he lives and has his being. Many of our habits are formed while we are still young. We do things in the way we see our relations and friends doing them. And as we grow in years and discretion, we acquire fresh habits from those with whom we generally come in contact. A student on entering college, tries to copy the way of living of some of his teachers and other students; a young man entering an office as a clerk does what the other clerks do; and the same thing is true in all occupations.

Wants of an Indian Labourer

A few illustrations may well be given at this stage. First let us take the wants of an Indian labourer. His wants are determined not so much by reason as by social factors and the habits, customs and fashion. The food that he takes is the one to which he is used from his birth. Any fundamental change in it is very displeasing to him. If he is a Bengali, he must have rice; if an upcountry man, he must have *chapatis*. So far as shelter is concerned, conditions are largely out of his control. He lives in dirty, insanitary, over-crowded and congested quarters. He cannot help it because of his poverty. Even where he can improve the conditions he fails to do them partly because he is habituated to that sort of living and partly because he does not want to lose the company of his old friends and acquaintances. His clothing is largely governed by habits and traditions. He very often wears the same types of clothes which his fore-fathers used to do. But the element of fashion makes its influence felt in this respect and a change in the type of clothes he wears is visible.

Wants of a College Student

Let us now examine the factors which determine the wants of a college student. Here the elements of fashion and habit play the most important role. When a student newly comes to the college, he takes to the use of fountain-pen, tooth paste and such other things, mainly because they are in fashion. Cinema-going may begin as a fashion, but it soon becomes a habit and cannot be easily got rid off. It is a matter of your observation that those of your friends who do not follow the current fashion and continue the primitive way of living are called by such names as *Buddhu* and *Shikarpuri*; while those who are very particular about their dress and appearance are supposed to be showy, vain and dandies. It becomes almost obligatory to a newly-admitted college student to mould his dress, food and other walks of life according to the current standard.

⁵Moreland, *Op. Cit.*

§ 4. CHARACTERISTICS OF WANTS AND THE LAWS BASED UPON THEM

Human wants are numerous and of different kinds. They differ from country to country and from place to place in the same country. Nevertheless, they possess certain common characteristics on which important laws of Economics are based. They are discussed below :

(1) *Wants in General are Unlimited.* Human wants multiply endlessly. As soon as one want is satisfied, another want begins to be felt. Man is thus spurred on to pursue an end which is ever vanishing before him. At present you may feel the want of a fountain-pen ; but if you purchase it, you may next begin to feel the want of a hat or a book, of which you had little idea before. Take the case of a poor man who is starving. If he is given very coarse food, consisting of millets and pulses, he will be well satisfied with it. But if he is sure of getting these things, he will begin to require better kind of food, for example, rice, *chapatis*, vegetables and *ghee*. Then he will like the food to be better served ; he will require metal dishes and wares instead of the earthen vessels which at first satisfied him. His wants will, thus, go on increasing limitlessly.

The progress of society has been simultaneous with an increase in the quantity and quality of human wants. The primitive barbarian had very few wants which were of a simple nature. With an increase of knowledge men began to feel new wants, the satisfaction of which was followed by still newer wants. It was this process of endless multiplication of wants which led up to the material civilisation of today. Wants are increasing constantly with wider diffusion of knowledge, improvements in the means of transport and communication and growth of trade. Upon this simple fact is based the *Law of Progress*, which states that material progress and increase of wants go hand in hand.

(2) *Each Particular Want can be Fully Satisfied.* Though wants in general are unlimited, any particular want has its limit. The want for a fruit or a book can be satisfied by consuming the desired fruit or book. Every individual want is capable of complete satisfaction. A want is satisfied slowly and gradually till its full satiety is achieved. Suppose you are hungry. After taking first *chapati*, your want is partially satisfied and you require the second *chapati* less urgently. This process of decreasing urgency of wants (or diminishing utility of commodities) goes on till your want is completely satisfied, and the next *chapati* has no utility to you. Upon this characteristic of wants is based the important *Law of Diminishing Utility* which states that, other things being equal, the utility of each successive unit of a commodity decreases to a person as the stock of that commodity increases.

(3) *Wants are Recurrent.* Though each want can be completely satisfied at any particular time, it may be felt again after some time. For instance, you may eat bread during the midday when you feel hungry ; and for the time being your want will be satisfied. But you will again feel hungry in the evening and will want food. Wants are thus recurrent.

(4) *Wants are Competitive.* Wants in general compete with each other. If a man has one rupee in his pocket, he may go to a cinema-show, or purchase a book, or give himself up to the pleasure of a sumptuous dinner, or spend it on joy-rides. All these wants compete with each other in the priority of satisfaction.⁶

⁶Some text-book writers illustrate the competitive character of wants by stating an example like this. Is a man wants something to cover his feet, he may purchase either a pair of shoes or *chappals* : shoes and *chappals* thus compete with each other. This example does not appear to be very sound. Shoes and *chappals* seek to satisfy one and the same want, *viz.*, the want for a cover to the feet. If they compete among themselves, it means that articles seeking to satisfy one and the same want compete among themselves. It is wrong to conclude from such examples that wants compete among themselves, since only one want is taken into consideration.

(5) *Wants Vary in Intensity.* Though wants are competitive, they are not all equally urgent. They vary in intensity, in other words, according to the individual and according to his circumstances at the time the wants are felt. One satisfies them in the order of their intensity. One has, indeed, to arrange one's wants in order of their urgency or intensity in one's own mind—in this one is helped by one's sense of feeling and is not required to make conscious effort—and one tries to satisfy them in that order. A man who is extremely thirsty and little hungry will first procure a glass of water and only thereafter biscuits and cakes. A very hungry boy will prefer biscuits to toys. Were all the wants of equal intensity, economic life would have become a matter of pure indifference in which no place could be given to discretion and choice. Upon this characteristic of wants is based the law of equi-marginal utility.

(6) *Some Wants are Complementary.* Some wants are co-operant or complementary. In either of them is satisfied, the other must follow suit. They are satisfied together and, therefore, each of them is complementary to the other or others. If you purchase a car or a fountain-pen, you must also purchase petrol or ink respectively. If you want to travel in a second class railway compartment, you should have a good leather suit case also.

(7) *Wants Become a Matter of Habit.* Most of the wants are acquired and artificial; only few wants are physiological and instinctive. Generally, they are acquired quite early in life and felt so repeatedly that they become a matter of habit. Smoking, for instance, is purely artificial. Nobody is a born smoker; we somehow begin smoking, very often for the fun of it, and later get habituated to it. Wants such as these constitute our standard of living and are of very compelling nature.

(8) *Present Wants Appear More Important than Future Wants.* To an average person a present want appears to be more important than a future want. A normal man lives in the present and will make greater sacrifices to insure the gratification of present than of future wants. Generally we do not look so far ahead as to make provision for future wants while we are satisfying the present ones; indeed, we rarely think of future wants at such a time. This is due to two reasons. Firstly, our telescopic faculty (i. e., the capacity to look ahead) is defective and makes us feel that the present want is more important than the future want. Secondly, the future is very uncertain. If we make provision for the future at the cost of the present and if, unfortunately, we expire early, we would lose a certain amount of satisfaction.⁷ On the basis of this characteristic, Seagar observes: "If goods available for present consumption be called *present goods*, and those to be available in future, *future goods*, the law may be formulated as follows: *The utility of future goods is less to the normal consumer than the utility of present goods of like kind and quality by an amount varying directly with the degree of futurity.*"⁸

(9) *Wants are Determined by Social Standards.* Most of our wants are determined by social standards of tastes rather than by independent judgments of individual consumers. This is conspicuously true of wants for clothing, shelter and amusement. That men—not to say of women—dress with reference to the opinion of their neighbours, changing the styles of their clothes, their shoes, their hats and even their collars, to conform to the vagaries of fashion, is a fact of familiar observation. There is a little more independence in the selection of dwelling houses, but here too the taste of many is subservient to that of the few who form independent judgments. As regards

⁷A. C. Pigou, *Economics of Welfare*.

⁸Seagar, *Principles of Economics*, pp. 71-72. Though very general, this characteristic of wants is more marked for some social classes than for others. It would not be far from the truth to say that young children and savages live entirely in the present; that the manual labouring classes especially in climates where the winters are mild, look only a few months or a few years ahead in their economic calculations; that the great class of artisans and merchants plan with reference to their own lives and the lives of their children; and that the founders of large family fortune include generations yet unborn in their view, *Ibid.*

amusements, it is notorious that one fad follows another, bicycle-riding giving place to golf, and golf—for those who can afford it—to motoring.⁹

(10) *Knowledge Increases Wants.* The tendency of wants to increase is universal; but the rate at which they multiply depends upon the rate of the spread of knowledge. In an Indian village, lying remote from the railway station, new wants arise slowly and in some cases they lie in a dormant stage; that is, the villagers do not feel conscious of any unsatisfied wants. But in the towns this is not so, because knowledge and information spread quickly there, while they spread very slowly in villages. As knowledge increases, people learn new means of satisfying their wants and the desire to obtain satisfaction of these wants becomes intense. Before the invention of motor cars, wealthy people were satisfied with horses and carriages; but when the motor cars were invented and a few of them were brought to India, people soon felt attracted towards them and began to feel actual want for them.¹⁰

This example illustrates how new wants arise from increased knowledge. In our country knowledge is steadily increasing through education and through the extension of trade and travel. It is not likely, therefore, that in near future the progress of India will be so rapid as to lead to a condition in which the larger proportion of the people will have their wants completely satisfied, than it is the case at present. On the contrary, we should expect that though people might be able to satisfy increasing number of wants, new wants will arise more and more quickly so that there will always remain some unsatisfied wants.¹¹

Some Alleged Exceptions

Certain exceptions to the above characteristics of wants are pointed out. They are, as a matter of fact, apparent rather than real. They are stated on page 67.

(1) Some persons like *sadhus* and ascetics, who have renounced this world, feel a limited number of wants. To them wants in general are not unlimited; nor do they increase in variety. To them there is no social standard to fashion their wants.

This is, of course, true; but an ascetic is not a social or an average man and, therefore, lies beyond the scope of Economics. In Economics, we study the wants of a normal, social and human being only.

(2) It is usually stated that each particular want is capable of complete satisfaction. But certain wants appear to remain unsatisfied almost for ever. A few instances are given below :

(a) *Want for display* is an example of this nature. A man who wants to distinguish himself through display, always seems to be in want of things like ornaments, motor cars, magnificent buildings, etc.; and unceasingly spends money on such objects. The more he possesses such things, the more he can display himself and the more he wants them. His want of display appears to be insatiable.

The above reasoning is correct. But the want of display is not the want for a particular commodity but for a large number of commodities. If you pick up a particular commodity out of the group of articles of display and increase its supply,

⁹*Ibid.*, p. 72.

¹⁰The higher the level of civilisation and culture, the more numerous and the more varied are the man's wants. We are told that in the 18th century it was very usual to come across labourers who, finding their wants, could be satisfied by 3 days' work each week, preferred to be idle for the rest of their time. At the present day it would not be difficult to find examples of people who would earn larger incomes if they worked harder or longer—but for whom additional satisfaction that could be obtained is not a sufficient inducement to make the greater effort required. Education and social improvement result not only in greater productive efficiency but also in greater capacity to enjoy.—Penson, *Op. Cit.*, p. 14.

¹¹Moreland, *An Introduction to Economics*, pp. 192-193.

the want for it will go on decreasing and a point sooner or later, will come when the next unit of that commodity will cease to have any utility.

(b) *Want for power* is a similar example. Some men want power over men; and the more power they get, the more they want. The lust for power seems to be real and insatiable; but men wanting power are not ordinary men. Economics is not concerned with abnormal characters.

(c) *The want for money* also appears to be insatiable. Indeed, it appears that its utility does not decrease at all; and if it does, it does very insignificantly.

But money is, however, not required for its own sake, but for the sake of the large number of commodities which it can purchase. As such, money is not a single commodity but is a group of all the commodities it can purchase. It is, therefore, only natural that the want for it may not be satisfied, wants in general being unlimited.

(d) *Miser's Love for Money*. A miser wants money and the more he gets it the more he requires it. It seems to be an exception to the general law that each particular want is satiable. But miser is not an average man. He is as far removed from the average man as the ascetic or *sadhu* who does not come under the scope of Economics.

§ 5. MULTIPLICATION OF WANTS

Sometimes the question is asked : Is the multiplication of wants desirable ? This question is extremely controversial and much can be said on both the sides.

: It is Desirable

Those who say that the multiplication of wants is desirable say that when a want is satisfied, some satisfaction is obtained. Consequently, if you satisfy a larger number of wants, you will get a larger volume of satisfaction, which is very desirable. Secondly, modern progress and civilization consists in the increasing number of wants. The most primitive man needed very few things : some leaves or bark of tree to cover his person and some rough tools to kill animals and detach flesh from skin. But as he became more and more civilized, his wants began to increase. And today in his most civilized state human wants are almost limitless. It is a historical fact and proves that progress or civilization consists in multiplication of wants. Thirdly, if we reduce our wants, our incentive to make economic progress or assert national individuality and rise in the world would be damped. The Malaya aborigine has few wants and while immigrants work and develop his country, he sits under a tree and cheerfully smokes, not doing anything and not caring for what others do. This is a sure sign of decay. Fourthly, if we do not believe in increasing number of wants, we would become economically weak so that any country of the world can come and make us a subject nation. If the standard of living of Indians rises, their urge to be free will greatly strengthen.

It is Undesirable

There are thinkers of the other school as well who believe that the multiplication of wants can never be desirable. These gentlemen are generally of a religious bent of mind and believe in spiritual development. They give the following reasons in support of their view : (i) If we have to satisfy a large number of wants, we will have little time for spiritual development which alone gives true pleasure. (ii) Not only this, but multiplication of wants and constant efforts to satisfy them make us materialistic and therefore make us unfit for spiritual development. (iii) Even on economic grounds wants should not be multiplied for a very good reason. It is true that if you satisfy more wants, mathematically you get more satisfaction. But once your wants increase,

they increase almost limitlessly ; so that even if you are able to satisfy many of them, you cannot even think of satisfying the rest. The wants which you cannot satisfy are a source of discomfort or pain to you. The net amount of satisfaction that you, therefore, get is very little. Really if you increase your wants to a considerable degree, you may get very little amount of net satisfaction.

The Right View

The above are the views for and against increasing the number of wants. We on our part believe that truth lies somewhere in between these two extremes. If we have very few wants, we have no incentive to progress and in fact no means of making progress. But if we have too many wants, our discomfort begins to increase. We should, therefore, have neither too few wants nor too many of them. The total satisfaction which on balance we get by increasing our wants can be represented by the following diagram :-

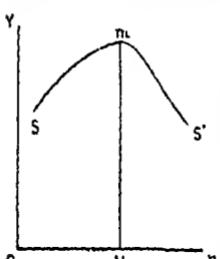


Fig. 9.

We have measured the total net satisfaction along OY axis and number of wants along ON axis. SMS' is the net satisfaction curve. In the beginning as we increase our wants, our satisfaction goes on increasing till the point M arrives. At this point, if we satisfy ON wants, our satisfaction will be maximum, i.e. MN. But if we increase our wants beyond that point, our net satisfaction begins to decline ; MS' curve suddenly goes down.

It is thus clear that the multiplication of wants is desirable only up to a certain extent. It is, however, impossible to give a precise degree of the extent to which wants should be multiplied.

TEST QUESTIONS

1. What do you mean by a want ? Distinguish it as clearly as possible from desire.
2. Show the relationship between wants and activities. Is it wants which react upon activities or the activities which react upon wants ?
3. What are the factors which determine the wants of a person ? Discuss in detail.
4. Discuss the important characteristics of wants and the laws based on them.

EXAMINATION QUESTIONS

1. Discuss the main characteristics of human wants. Is the multiplication of wants desirable ? (U. P., 1942)
2. Wants lead to productive activities and productive activities to newer wants. Discuss it fully. (U. P., 1938)
3. Mention the important characteristics of wants. Moreland says, "It is not likely that the progress of India will lead to a condition in which larger proportion of the people are completely satisfied than is the case at present ". Explain this statement. (U. P., 1926)
4. Moreland says that "the wants of the Indian labourer are determined largely by custom and habit". Name the ordinary wants of an Indian labourer and show which of them are governed by (a) custom, (b) habit and (c) reason. Are there any wants in the case of college students that are determined by custom ? Give examples. (U. P., 1926)
5. What are the characteristics of human wants ? Discuss the relation between wants and activities. (U. P. Com., 1942)
6. Discuss laws of wants. Show the connection between wants and activities. (U. P. Com., 1933)
7. Mention the factors on which wants depend. Is it a fact that wants increase more rapidly than income ? If so, what steps would you take to balance the two ? (U. P. Com., 1930)

8. Do wants give rise to activities or activities give rise to wants? Illustrate your answer. How far is the multiplication of our wants desirable? (Raj., 1948)

9. State the characteristics of economic wants and describe the wants of an Indian farmer as affected by custom, habit and reason. (Rajputana, 1938)

10. Mention the characteristics of economic wants. Are there any wants outside the scope of Economics? (Rajputana, 1932)

11. Describe the more important characteristics of wants. (Punjab, 1935)

12. What is the distinction between 'wants' in the economic sense and mere 'desire'? How would you classify wants? (Delhi, 1939)

13. "There is an endless variety of wants but there is a limit to each separate want."—Marshall. Explain. Can wants be measured? (Delhi, 1933)

14. Why is a knowledge of human wants so essential for the study of Economics? Enumerate and explain some characteristics of these wants. (Delhi, 1936)

15. "Man's wants have various characteristics each of which is of great importance, for on each depends some great economic law." Amplify this statement. (Bombay, 1939)

16. What are the chief characteristics of human wants, show how the science of Economics takes these characteristics into account. (Bombay Com., 1939)

CHAPTER 12

CLASSIFICATION OF WANTS

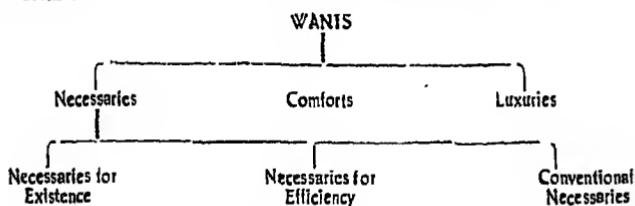
Consumption may be economised by a change of habit but any stinting of necessities is wasteful—
Marshall

We have already seen that wants vary in intensity or urgency. All wants are not of the same intensity; some wants are more intense, others less intense. Wants which are most urgent are known as *necessaries*; those which are least insistent are known as *luxuries*; while those of medium intensity are known as *comforts*. The order of the urgency of wants and the order in which they are normally satisfied is as follows: (i) Necessaries, (ii) Comforts, and (iii) Luxuries.¹ These are the three classes in which wants can be divided.

1. Necessaries

By necessities we mean those wants which are of very primary and elementary nature; so much so that if they are left unsatisfied, acute pain is caused. Their satisfaction is necessary for the preservation of life, efficiency or social prestige.²

Necessaries are of three varieties. In the first group come those wants which must be satisfied in order to preserve life. If we do not satisfy these wants, we shall not be able to keep alive. They are known as *Necessaries for Existence*. In the second group fall those wants which must be satisfied for the maintenance of our efficiency. They are known as *Necessaries of Efficiency*. If we consume these articles, our efficiency will remain intact; otherwise, it will deteriorate. In the third and final category come those wants which have to be satisfied in order to keep social prestige. These are known as *Conventional Necessaries*. The following classification of wants makes this subdivision clear :



(1) *Necessaries for Existence*.³ The articles which are just necessary for keeping a man alive are known as necessities for existence. They include that minimum quantity of food and drink, clothing and shelter without which life cannot be preserved.

Necessaries for existence are not the same in all the countries and climates and for all the time to come. "In cold countries the term includes, in addition

¹The order in which wants are satisfied is not a matter of set rules or regulations but of personal habits, tastes and desires which vary. Wants will be satisfied in order of their urgency, in the absence of any such disturbing factor as sense of moral obligation or duty, etc.

²Students must not write "articles of necessary." They should write "articles of necessity" or "necessaries instead,

³Also named as 'absolute necessities'.

to sufficient food and drink, a certain amount of clothing and also some sort of house for shelter ; in the plains of India the necessary amount of clothing and shelter is very small and perhaps a blanket for the winter is all that a man absolutely requires, so that here the term necessities for existence means very little more than the small amount of grain and water that is sufficient to keep people alive.⁴ In India there are large number of unfortunate and poor persons who do not even get all the necessities for existence and actually semi-starve.

(2) *Necessaries for Efficiency.* Necessaries for existence are meant to keep a man alive. In order that he may be able to work efficiently in the occupation he happens to be engaged in, a man has to consume certain things over and above the bare necessities for existence. Such articles which are necessary for the preservation of one's efficiency are known as Necessaries for Efficiency.

Moreland observes that this term includes everything which a man must consume in order to work efficiently at his occupation and educate his children up to the point where they can be expected to do as well as he has done. In India the term includes : (i) better and more well-balanced food than is just necessary for existence ; (ii) a certain amount of clothing and furniture and an airy and well ventilated house for shelter, and (iii) opportunities for medical treatment and for the education of children at least up to the stage which he himself has reached. A very small proportion of the people in India can enjoy all the necessities for efficiency, mostly because of poverty and partly because of ignorance.

(3) *Conventional Necessaries.* Conventional necessities are those necessities which must be consumed because of some social convention and in order to maintain social prestige. A man lives in a society having certain set traditions or conventions or customs which each member must follow. For instance, the society requires a man to offer *pan* and tobacco when a guest comes ; to give a feast when a marriage takes place ; to undergo certain religious ceremonies when somebody dies. A man has to follow these customs and conventions on the pains of social discredit, *badnami* as it is called, and sometimes even ex-communication. This is particularly so in a custom-ridden country like India.⁵ This accounts for the great urgency of this class of wants. In fact, many people sacrifice the consumption of articles of efficiency, in order to consume conventional necessities. For instance, cultivators and labourers will semi-starve rather than not offer *hukqa* or *pan* to the visitors or not give a feast on the occasion of a marriage or death. Similarly many a student will give up the consumption of such healthy stuffs as butter and *ghee* in order to enjoy cinema-shows which every polished student is expected to see.

Factors Determining Necessaries. The factors governing each class of necessities are different. Necessaries for existence are primarily determined by environment and physiological and economic factors. Necessaries for efficiency are, of course, determined by the nature of work a man is expected to do. Necessaries for efficiency of a blacksmith must naturally differ from those of a lawyer or a teacher. Much discretion has to be used in selecting necessities for efficiency. Conventional necessities are, of course, determined by social customs and conventions which are an index of the stage of social development.

⁴Moreland, *An Introduction to Economics*, p. 151.

⁵"To this class of conventional necessities belong the want for tea, coffee and *pan* among the higher classes in India and the want of *hukqa* among the masses. To this class also belong all our wants connected with social and religious ceremonies, and in a custom-ridden country like India, it is not difficult to find people who for months and years economising on their absolute necessities to make a grand show for a day or two on the social wants."—B. G. Bhatnagar, *Outlines of Economics*, p. 42.

2. Comforts

Necessaries, it may be repeated, are just sufficient to keep a man alive, to preserve his efficiency at work and to maintain his social prestige. This is the bare minimum for ordinary living. Usually some other nice articles have to be included in consumption for a decent living. Articles of comfort are of this nature. Their consumption affords appreciable pleasure and also increases consumer's efficiency slightly; while their non-consumption neither causes much pain nor does it decrease actual efficiency (though it certainly prevents the additional efficiency which their consumption would have yielded). Obviously, the articles of comfort enable a man to lead a richer and fuller life than what is otherwise possible. Good shoes, fine *kurta*, cinema-shows and such other articles may be cited as examples of articles of comfort.

3. Luxuries

Luxuries are those articles whose consumption affords very great pleasure but does not contribute to our efficiency; and whose non-consumption neither causes any pain nor decreases our efficiency. Palatial buildings, the maintenance of Rolls-Royce and other costly cars, the keeping of elephants by Indian princes and the possession of costly paintings of renowned painters are some of the examples of luxuries. Because articles of luxury do not increase our efficiency but simply give us pleasure, their consumption is often regarded as useless and is looked down upon. This is the reason, why Professor Gide defines luxury as the "satisfaction of a superfluous want" and Professor Ely calls it "excessive personal consumption".⁶

There are certain articles of luxury, like wine, which give us only fleeting pleasure but decrease our efficiency quite considerably. Their non-consumption causes much pain if one gets addicted to them, though it prevents a deterioration of efficiency which would otherwise result. They are known as *extravagances*.

The Standpoints of Classification

The above classification of wants into necessities, comforts and luxuries has been made from two points of view; (i) efficiency and (ii) pleasure and pain.

Efficiency. Those articles which when consumed preserve efficiency and which if not consumed decrease it, have been called necessities. The articles which when consumed contribute to efficiency slightly and which if not consumed do not decrease actual efficiency (but cause a loss of efficiency which could have been otherwise

⁶The following table gives a provisional and rough list of necessities, comforts and luxuries :

Necessaries	{ for sustaining life for mere subsistence than the minimum	{ i.e., a reasonable amount of plain wholesome food, of decent clothing and of healthy home surroundings.
Comforts	{ for fuller life for more wholesome existence decent standard of living	{ i.e., better food, clothes and housing with some provision for recreation and amusement and for the satisfaction of intellectual needs.
Luxuries	{ for refinement of life { for expensive habits and amusements { a more elaborate mode of living	{ i.e., costly motors, ornaments, table delicacies, etc., together with the indulgence of expensive tastes in art, literature and travel,

achieved) are known as articles of comfort. Finally, those articles which if consumed do not increase efficiency and which if not consumed do not decrease efficiency, are known as articles of luxury. When the consumption of the latter actually decreases efficiency, they are called articles of extravagance.

	Effect on efficiency		Effect on pain and pleasure	
	When consumed	When not consumed	When consumed	When not consumed
Necessaries	Preservation	Great decrease	Slight pleasure	Acute pain.
Comforts	Slight increase	No decrease in actual efficiency (but loss of possible increase in efficiency).	Sufficient pleasure	Slight pain.
Luxuries	No increase	No decrease	Very great pleasure	No pain (unless used)
Extravagances	Decrease	Prevention of possible decrease	Momentary pleasure	Much pain if one gets addicted.

Chart 10. Showing the distinctions between necessities, comforts and luxuries.

Pain and Pleasure. The second point of view of the classification is the causing of pain and pleasure. When consumption of an article gives only slight pleasure while its non-consumption causes great pain, it is known as an article of necessity. When, however, its consumption gives sufficient pleasure while its non-consumption causes slight pain, it is known as an article of comfort. Finally, when the consumption of an article gives ample pleasure, while its non-consumption causes no pain, it is known as an article of luxury. If the consumption of an article simply gives us momentary pleasure, while its non-consumption causes intense pain provided one gets used to it, it is known as an article of extravagance.

Necessaries, Comforts and Luxuries are Relative Terms

It must not be supposed by the reader that a particular article is an article of necessity, or comfort, or luxury for all the people and all the time to come. In fact, the personal circumstances of the consumer, e. g., the income, occupation, surroundings, habits, etc., determine whether an article is one of necessity or of comfort or of luxury to him. It follows, therefore, that the same article may be a necessity to one, a comfort to another and a luxury to the third. For instance, a car is a necessity for a medical doctor who has to rush from one patient to another with the least possible loss of time; it may be a comfort to a professor, since it keeps him refreshed for the lectures, saves his time and thus somewhat increases his efficiency; but it is undoubtedly a luxury to an idler who uses it merely for joy-rides. Again, tea is a necessity for an educated Indian, while it is probably a luxury for an Indian cultivator. Shirts were once considered as articles of luxury in Europe but now they are articles of bare necessity. In India they are still articles of luxury for many poor people. A carriage is a comfort to a woman of fashion, a necessity to a physician and a luxury to a tradesman.

An article may similarly be one of luxury to a person at one time, of comfort to him at another and of luxury at still another time. For instance, a fountain-pen is obviously a luxury for a small child reading in an infant class. It becomes an article of comfort to him when he becomes a student of IX or X class; but it becomes a necessity for him when he joins a college and has to take down notes very quickly.

It would, indeed, be wrong then to draw a definite line of demarcation between the articles of necessity, of comfort, and of luxury, so as to apply to all persons or to be valid permanently. These three terms are at best only relative; and when we say that a particular article is an article of necessity, or comfort, or luxury, all that is meant is to say that it is so in respect to a particular person at a particular time.

Order of Consumption

It is sometimes said that a person first spends his income on necessities, then on comforts and finally on luxuries. This statement is generally and largely true. In case a man spends his income most wisely, he would naturally act in this manner. Necessaries are most urgent and would receive his first attention. Comforts would then be secured; and luxuries would be obtained only in the last. But unfortunately everybody does not spend his income wisely. Much of our expenditure is thoughtless and careless; and when it is so, we often spend on comforts and luxuries even if our necessities have not been satisfied. An ekkawala may thoughtlessly go to cinema show and may then be left with only a few pice which may not bring him enough food. Such cases are not rare. Another reason of unwise expenditure is lack of intelligence and understanding; and an educated man would not spend his money so badly as an illiterate person. *Thoughtlessness and lack of knowledge of correct expenditure are the two reasons why the proper order of expenditure is not always followed.*

TEST QUESTIONS

1. Give a classification of wants.
2. Distinguish between necessities, comforts and luxuries. What are the standpoints of classification adopted by you.
3. Show how necessities, comforts and luxuries are relative concepts.

EXAMINATION QUESTIONS

U. P. Board

1. Distinguish between economic and non-economic wants. Classify the former bringing about a clear distinction between the various classes. Give examples of each class. (I. A., 1939)
2. Distinguish between necessities and comforts. (I. A., 1987)
3. What are the chief characteristics of human wants? Explain and illustrate the distinction between necessities, comforts and luxuries. Give example from India. (I. A., 1985)
4. What are the tests you would apply in classifying commodities into necessities, comforts and luxuries? Illustrate from Indian examples. (I. A., 1929)
5. Distinguish between (a) necessities and luxuries; (b) necessities for the life and necessities for efficiency. Point out the importance of these distinctions. (I. A., 1927)
6. Distinguish clearly between necessities, comforts and luxuries. Can an article be a necessity, a comfort and a luxury to the same individual? (I. Com., 1940)

Rajputana Board

7. Show how the classification of wants into necessities, comforts and luxuries does not primarily refer to articles of consumption, but their units, and values according to the individual consumer, the time and place. Give examples from India wherever possible. (I. A., 1945)
8. What do you understand by (a) necessities for existence, and (b) conventional necessities. Show how consumers' goods are classified into necessities, comforts and luxuries. (I. A., 1941)

9. Economic wants have been classified into those for necessities, comforts and luxuries. Fully explain the three items. What tests would you apply in distinguishing between these? (I. A., 1939)

10. How would you classify consumption into necessities, comforts and luxuries? Explain your answer by taking examples of such goods in common use in India. (I. A., 1937)

11. How, and why, would you classify consumers' goods in necessities, comforts and luxuries? Give reasons. (I. A., 1984)

12. How would you distinguish between necessities, comforts and luxuries? Illustrate with reference to the wants of (a) a college student, (b) an Indian farmer, and (c) a factory hand. (I. A., 1931)

Other Examination Bodies

13. Clearly distinguish between necessities, comforts and luxuries. (Punjab, I. A., 1956)

14. How do you classify wants into necessities, comforts and luxuries? Give illustrations. (Nagpur, I. Com. 1942; Arts, 1942)

ATTENTION

[Sometimes *Demand* is discussed under "consumption." We have discussed it under "Exchange" (Book IV, Chapter 46, to which a reference may be made.]

CHAPTER 13

THE LAW OF DIMINISHING UTILITY

The utilities of additional units of any good to any consumer diminish normally as his supply of units of that good increases.—Seager.

§ 1. THE EXPLANATION OF THE LAW

The utility yielded by an article is subject to an interesting law which operates daily in the ordinary course of life. It is a matter of common observation that the more we have of a commodity, the less urgently we want its subsequent units; in other words, the utility yielded by its succeeding units goes on diminishing. Suppose you are very hungry, and get a mango from somewhere; its utility will be very great to you because it practically saves you from starvation. You will require a second mango also to satisfy your hunger; but since a part of your appetite has already been satisfied, the second mango will not give you as much utility as the first one. The third mango will yield even less utility, as compared with the second mango, for the same reason. The utility of each subsequent mango will similarly go on diminishing gradually, till you arrive at the stage where your hunger is fully appeased, and the utility of the next mango in succession drops to zero—it will be a matter of indifference to you whether you eat this final mango or not. Even if you consume it, you will probably dislike to eat further mangoes lest they might cause constipation—you will derive 'negative utility' or 'disutility' from them. This commonplace example shows that the utility of each successive unit of an article goes on diminishing as its supply goes on increasing, other things remaining the same.

This tendency operates universally and is visible in the case of all the objects satisfying human beings.¹ The first overcoat may give you more utility since it saves you from cold; but the second one will afford less utility as it just provides a variety. The second pair of shoes, the second fountain-pen, the second hat and the second table do not yield as much satisfaction as the first ones. Even the less material wants obey the same law. Eyes tire of beautiful pictures or scenes and ears are deadened by even the sweetest music in course of time.

This tendency is known in Economics as the Law of Diminishing Utility, and may be stated as below: *Each unit of a commodity gives, other things remaining the same, less utility to the consumer than the foregoing unit.*²

Illustration

We shall now take an example to illustrate this law. Suppose a man has a big family and requires six maunds of wheat per month for its consumption. The utility of the first maund of wheat is very great to him since without it the members of his family will starve to death. The utility of the first maund, let us say, is 100. The second maund of wheat is necessary, but is not so urgent as the first maund. Its utility will, therefore, diminish, say to 80. The utility of the third maund will be still less, say 60; the utility of the fourth maund may be 25; that of the fifth, 10; and that of the sixth, zero. He will not purchase the seventh maund of wheat obviously because that is not required. The seventh maund has for him 'negative utility' or 'disutility', firstly, because he will have to spend money on it without getting any satisfaction in return; and secondly, because the consumption of the additional maund might spoil the

¹As our capacity to enjoy food is limited so is our capacity to enjoy clothes. A normal person intensely feels the need for a respectable suit of clothes, a pair of shoes, etc. A second is less indispensable, but satisfies a lively desire. Additional suits satisfy wants of steadily diminishing intensities and in time the point of satiety is reached even by the most fastidious dandy.—Seager, *Principles of Economics*, p. 71.

²Marshall states this law as follows: "The additional benefit which a person derives from a given increase of his stock of a thing, diminishes with every increase in the stock that he already has."—Marshall, *Principles of Economics*.

digestion of the consumers. Its utility may be said to be -20 (minus twenty). The utilities of the successive units of wheat may be tabulated as below :-

Maunds of Wheat	Units of Utility
1	100
2	80
3	60
4	25
5	10
6	0
7	-20

It is clear from the table how the utility of each following maund of wheat diminishes consecutively.

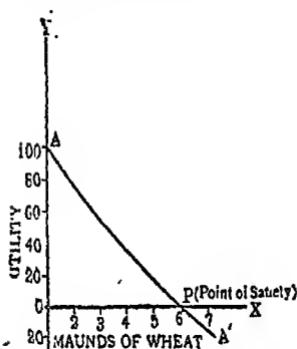


Fig. 10—Illustrating the law of diminishing utility.

point of zero utility and is also known as the 'point of satety'.¹³

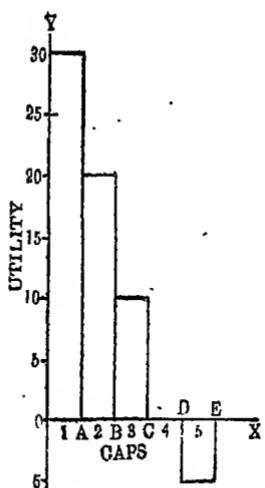


Fig. 11

Diagrammatic Representation

The above illustration can be represented by a diagram. In Fig. 11, maunds of wheat have been measured along the OX axis; and utility along the OY axis. The first unit of wheat gives 100 units of utility and thus we get the point A. We plot other points similarly and get the AA' curve by joining these points. This curve shows a steep fall representing the fall in utility. The utility of the first maund of wheat is OA, but the utility of the sixth maund of wheat is zero. The curve AA' touches OX at the point P where the utility is zero. The seventh unit of wheat gives dis-utility so that the curve extends below the line OX, which is the line of zero utility. The point P is the

Diagrammatic representations are of two kinds; (i) curves as shown above and (ii) rectangles to be discussed below. If an article is divisible, i.e., if it can be divided without any loss of its value, its utility is represented by a curve. Wheat can be divided without any loss in its value; therefore, its utility has been represented by a curve as above. But take the case of a cap. If you cut a cap into two, its utility will be seriously curtailed. Cap is an Indivisible commodity since its utility decreases if it is divided. The utility of indivisible commodities is best represented by rectangles. Rectangles gives the idea of the separateness of each unit and therefore, this method is adopted in the case of indivisible units.

Suppose the following is the table of utility of caps. Utility Derived

1	80
2	20
3	10
4	0
5	-5

(continued on page 76)

§ 2. OTHER THINGS REMAINING THE SAME

In the statement of the Law of Diminishing Utility : we mentioned that the utility of each successive unit goes on diminishing, *other things remaining the same*.⁴ The words 'other things remaining the same' might appear to the reader vague and useless ; but this is not so. These words are very significant and imply the following important qualifications :

(1) *The units of the commodity must be similar in quality and quantity.* If this condition is not satisfied, the law may not operate. Suppose the first *chapati* given to a very hungry man is very coarse ; but the next *chapati* is made of superior stuff and is very tasteful. The second *chapati* will evidently give him more satisfaction than the first one. The law of diminishing utility does not operate here because the units of *chapati* are not similar. Were the second *chapati* as coarse and rough as the first one, its utility would definitely be less than that of the latter. Similar considerations apply to the quantity of each unit. The quantity of each unit must remain the same. If the second *chapati* is twice as heavy as the first *chapati*, it is likely to give more satisfaction than the latter.

(2) *The period of consumption must be the same.* In other words, the period over which consumption is spread should be continuous and without break otherwise the law will not operate. If a man, for example, takes food once in the morning and again in the evening, he might relish it more in the evening than in the morning probably because the hard work of the day has given him good appetite or because some good news has cheered him up. The law of diminishing utility does not apply here because the time of consumption is not continuous and the same. In fact, food has been taken twice and the law operates in each case separately. But if the second diet is taken immediately after the first diet, the utility of the former will be definitely less than that of the latter.

(3) *The mental outlook of the consumer should remain the same.* This is very important. The man who is taking food may, for instance, find that the sixth loaf that he has taken has yielded zero utility. If he now takes a little *bhang* or some other intoxicant, he may suddenly feel a craving for more loaves. It appears, then, that the law of diminishing utility does not apply in this case. Of course, it does not, because the mental outlook of the consumer does not remain the same.

(4) *If the period of consumption is long, the fashion, habit and income of the consumer should remain the same.* In the case of durable goods, a change in either of these three things, namely, fashion, habit and income, may hinder the operation of the law and may increase the utility of successive units of the commodity in question. For instance, a particular type of shoe may not be in *fashion* and its utility may be fairly low to a man ; but if somehow it again come into fashion, its utility will immediately increase. Again, a man not addicted to cigarettes does not derive any utility from them ; but if he somehow acquires the *habit* of smoking, their utility will increase to him. Finally, a man may be so poor that it may not be worth his while to purchase a costly flower-vase ; but if he suddenly becomes rich, he may begin to feel its necessity very urgently and its utility to him may increase. In all these three cases the law of diminishing utility does not operate because the fashion or habit or income has changed. The law operates only when these factors remain the same.

In Fig. 12 each rectangle shows the utility of a unit. The first rectangle, representing the utility of the first cap, is the biggest. Each successive rectangle, representing the utility of each successive cap, goes on diminishing. There is no rectangle to represent the utility of the fourth cap obviously because its utility is zero. The utility of fifth cap is negative, therefore, the rectangle, representing its disutility is down, the axis *OX*.

*'Other things being equal' is the alternative expression.

(5) *The price of the commodity and its substitutes should remain the same.* If an article becomes cheap, one may want it with increasing intensity and its utility may, therefore, increase. The utility of an article may also increase if the price of its substitutes has gone up, so that one will now shift one's consumption to the article in question whose utility has obviously gone up due to its comparative cheapness. The unchangeableness in the price of the article in question and the substitute thereof is important for the operation of the law.

§ 3. EXCEPTIONS TO THE LAW

The law of diminishing utility has almost universal application.⁵ If the various assumptions covered by the phrase "other things remaining the same" obtain in practice, the law *will* operate. Certain exceptions to this law are, however, suggested most of which are apparent rather than real.

Apparent Exceptions

(1) *If we take a very small quantity of an article as our unit, the law may not operate.* Professor Chapman gives the example of a man who wants to prepare tea but who has no coal. Suppose he gets an ounce of coal. This much of coal is practically useless to him and has hardly any utility. If he gets another ounce; the quantity of coal will come near the serviceable quantity so that the utility of the next ounce will, of course, be greater than that of the first ounce. The utility of each additional ounce will thus go on increasing till he gets adequate quantity of coal; after this stage, it will begin to diminish.⁶

In this diagram, the utility curve of coal (AA'A'') goes on increasing till the point A' is reached. At this point, sufficient quantity of coal has been obtained; therefore, the utility of each successive unit begins to diminish. This is the reason why AA' is a rising curve while A'A'' is a falling curve.

In this case the law does not operate because the small quantity of coal taken in the example does not constitute a unit. In actual practice we find that the unit of a commodity is big enough to be of some service. Therefore, one ounce of coal is not really a unit; nobody uses coal in the units of an ounce; it is only a part of a unit.

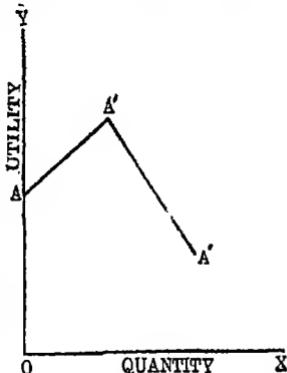


Fig. 12.

(2) *Curious and rare objects are alleged to be exceptions to this law.* A stamp collector will attach greater importance to every new and rare stamp he is able to gather because that will go to make his album more precious than before. Similarly a man who has the hobby of collecting old autographs will feel more satisfied with every successive autograph he is able to collect. This exception is apparent rather than real, because an average man is not habitually actuated by hobbies: his simple wants and needs do not share the characteristics of hobbies. As such, this example is abnormal. Moreover, even in the case of such persons,

⁵The tendency shows itself so widely and with so few exceptions that there is no significant inaccuracy in speaking of it as universal.—Taussig, *Principles of Economics*, Vol. I.

⁶Chapman, *Outlines of Economics*.

a point will be reached, howsoever remote that may be, when the additional stamps or autographs will give diminishing satisfaction.

(3) *A drunkard is said to obtain increasing utility from each additional peg of wine.* The case of a drunkard is obviously abnormal since his mental outlook is changed after he takes the first dose of the liquor. Moreover, a drunkard is not an average man and his actions are, therefore, not the concern of an economist. Finally, even in the case of such persons a point does arise when the utility of each successive dose begins to decrease. This exception is, therefore, apparent, not real.

(4) *Love of display, love of power and love of money are said to be other exceptions to this law.* The lust of this sort is almost insatiable and, therefore, the utility of every additional unit of the commodity ministering to any of these wants appears to be increasing. Such persons, however, are removed from the average man, and Economics does not study them. Moreover, even in these cases a point can arise when the law will set into operation. All of us have read the story of King Midas who was mad after gold but, when given an unlimited quantity of that metal, soon grew tired and ceased to attach any value to it.

(5) *Sometimes it is said that the utility of a commodity begins to increase if a large number of people begins to use it.* Telephone is the case usually cited in this connection. As the number of persons who have telephonic connections increases the utility of the telephone also rises because its owner can now talk to a larger number of persons.

This example is fallacious, though the fallacy is difficult to detect. According to the law, the successive units of a commodity give diminishing satisfaction to a consumer. If the owner of a telephone takes one more connection, naturally its utility will be less to him than that of the former connection. In the example given above the telephonic connection with a particular person remains only one. Since successive telephones acquired by a person have not been taken into account, this example does not come under the law of diminishing utility. Moreover, this example anticipates a change in the habit of the people which is excluded from the conditions necessary for the operation of the law.

Real Exceptions

(1) *Professor Taussing mentions that a second or a third reading of good piece of poetry or the hearing of good music for the second or the third time may yield greater utility than the first.* This exception seems to be real. This is a fact of our ordinary observation.

However, even in this case a point will arise sooner or later, when the utility begins to diminish and the law will begin to operate. Each receptive faculty is, in fact, subject to exhaustion and takes time to recuperate.

(2) Some economists believe that when we begin to consume an article, the utility of each successive unit goes on increasing in the beginning. It is only after a certain stage in consumption is reached, which is called by them the 'point of optimum satisfaction' that the utility begins to diminish. [Refer to Fig. 12, p. 112.]

If the psychological assumption of the above example is taken to be correct, then it is a real exception to the law which does not operate till the point of optimum satisfaction is reached. But there is no positive proof to support the accuracy of the above statement : the validity of this exception cannot be definitely ascertained.⁸

⁸These two exceptions can be excluded from the list of real exceptions, if we restate our law as follows : *After a certain stage in consumption is reached, each successive unit gives diminishing utility, other things remaining the same,*

TEST QUESTIONS

1. Enunciate and explain the law of diminishing utility. Give diagrams to illustrate your answer.
2. Are there any exceptions, apparent or real, to the law of diminishing utility? Discuss them fully.
3. How do you state the law of diminishing utility? What is the implication of "other things remaining the same"?

EXAMINATION QUESTIONS

U. P. Board

1. State and explain the law of diminishing utility with the help of a diagram. (I. A., 1942)
2. Explain as clearly as you can the law of diminishing utility. Are there any real or apparent exceptions to this law. (I. A., 1929, 1935, 1936, 1939)
3. What is meant by utility? State the law of diminishing utility. Point out the significance of the phrase 'other things being equal'. What are these other things? (I. A., 1930)
4. Explain the law of diminishing utility giving particular attention to formulation of conditions under which it is true. Illustrate. (I. A., 1927)
5. Describe the law of diminishing utility. State exceptions, if any, to the law. (I. Com., 1942)

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6. State and explain the law of diminishing utility. Analyse the reasons for any exceptions. Illustrate. (I. A., 1942, 1940)
7. 'The more we have of a thing the less we want still more of that thing.' Explain the above-statement. (I. A., 1935)
8. Explain the law of diminishing utility, giving reasons for its operation. (I. A., 1931)
9. State the law of diminishing utility and explain the reason why utility from successive units of consumption decreases with an increase in their quantity. (I. A., 1932)

Other Examination Bodies

10. What is meant by utility? State and illustrate the Law of Diminishing Utility. (I. Com., 1943)
11. What is the Law of diminishing utility? How does it arise? (I. Com., 1942)
12. Explain as clearly as you can the law of diminishing utility. What are the conditions under which it operates? Illustrate by means of a diagram. (I. Com., 1940)
13. Are there any exceptions to the law of diminishing marginal utility? (Panjab, I. A., 1936)
14. State what you consider to be the most important law of Consumption. (Panjab, I. A., 1931, 1936)
15. Clearly state and fully explain the law of diminishing utility. (Nagpur, I. Com. and Arts, 1942)
16. Explain the Law of Diminishing utility and distinguish between total and marginal utility. (Nagpur, I. A., 1941)
17. Enumerate the law of diminishing utility. How is the law related to:
 - (a) the law of demand;
 - (b) elasticity of demand;
 - (c) the law of equi-marginal utility? (Delhi, I. A., 1934)

CHAPTER 14

MARGINAL AND TOTAL UTILITY

That part of a thing which he is only just induced to purchase may be called his marginal purchase, because he is on the margin of doubt whether it is worth his while to incur the outlay required to obtain it. And the utility of his marginal purchase may be called marginal utility of the thing to him.—*Marshall*

§ 1. MEASUREMENT OF UTILITY

Utility is the capacity of a commodity to satisfy some human want ; in other words, it is the want-satisfying power. We have already discussed the meaning of utility in a previous chapter, which need not be reproduced here. Here we may emphasise a fact of common experience that utility of all the goods is not the same : some goods have greater utility than others. A question, then, naturally arises : Can we exactly measure utility.

Economists do measure the utility of an article ; but this measurement is not very exact because economists do not possess any accurate means or apparatus of measurement. If you want to measure temperature, you can measure it with a thermometer. If you want to measure the atmospheric pressure you can measure it with a barometer. If you want to measure cloth, you can measure it with a yard stick. No such accurate measure is, however, available for measuring utility. But our mind has the capacity of measuring utilities of different articles. And whenever we have to choose between two articles, we unconsciously make the comparison of their utilities in our mind.

The comparison of utility thus made in our minds may be expressed in two ways which may be explained by an illustration. Suppose you require Marshall's "Principles for Economics" very urgently while Parker fountain-pen is not so important to you. (i) Then, you may say that Marshall's *Principles* is twice as important to you as Parker fountain-pen ; or if the utility of Marshall's *Principles* is 2, the utility of a Parker pen is only 1. (ii) Or, you may adopt another way of expressing the same idea ; you may say that if Marshall's *Principles* gives you the utility worth Rs. 100, Parker fountain-pen gives you the utility worth Rs. 50.

In the above example the two chief methods of measuring utility have been followed. In the first case, utility has been expressed in *numerical figures*, as when it is said that if the utility of Marshall's *Principles* is two, that of Parker pen is one. In the second case it has been expressed in terms of money, as when it is said that if the utility of Marshall's *Principles* is Rs. 100, that of Parker pen is only Rs. 50.

Utility and Wants

The utility of an article depends upon the intensity of the want which it satisfies. If the want satisfied by an article is very urgent, the utility of that article will be very great. If, on the other hand, the want satisfied by the commodity is of ordinary urgency, that commodity will possess ordinary utility. Utility, as said above, is the want-satisfying power of an article and is great or less according as the want satisfied is more urgent or less urgent. Degree of utility varies directly with the intensity of wants.

§ 2. MARGINAL UTILITY

The last unit of a commodity consumed at any particular time is known as *marginal or final unit*; and utility of the marginal or final unit is said to be the *marginal or final utility* of the article. If a man takes two oranges at a time, yielding 10 and 9 units of utility respectively the second orange is the *marginal unit*, and its utility, namely 9, is the *marginal utility* of oranges. If he takes three oranges instead of two, the third orange will be the marginal unit and its utility, say 7, will be the marginal utility of oranges.

Marginal utility may be positive, zero or negative. When the consumption of the marginal unit gives some satisfaction, the marginal utility is *positive*; when it neither gives satisfaction nor causes any dissatisfaction, the marginal utility is said to be *zero*; whereas if it causes some dissatisfaction, or yields disutility, the marginal utility is *negative*. The marginal utility is positive before the point of satiety is reached; at the point of satiety the marginal utility becomes zero; after that point, it actually becomes negative. Suppose the following is the utility of successive maunds of wheat to an individual:

MAUNDS OF WHEAT	UTILITY
1	100
2	80
3	60
4	25
5	10
6	0
7	-20

Positive

Zero

Negative

In the table the utility of various maunds of wheat is given. Each unit becomes the marginal unit when it is the last unit consumed; and its utility becomes marginal utility. Marginal utility is positive up to the fifth maund of wheat. It drops down to zero if the sixth maund is purchased. If the seventh maund is also purchased, the marginal utility becomes negative—it gives disutility.

The table given above has been represented diagrammatically (Fig. 10) on page 109 to which the reader is referred. Along the OX axis we have measured the units of wheat and along the OY axis the unit of utility. Various points have been plotted and the utility curve AA' has been obtained by joining them. So long as the curve does not touch OX, it appears above the OX axis, which shows that its marginal utility is positive. It touches the OX axis at P where its marginal utility vanishes, i.e., it becomes zero. After that the curve goes below the OX axis showing that the marginal utility thereafter becomes negative.¹

¹The above is the example of a divisible commodity. We may also take the case of a cap which is an indivisible commodity. The following is the table of utilities derived from the use of cap:

Units of Caps	Utility Derived
1	90
2	20
3	10
4	0
5	-10

Positive

Zero

Negative

For the diagrammatic representation of the above table, see p. 109, Fig. 11.

OA, AB, BC, ED and DE represent the various units and the rectangles standing over them show the utility due to each of them. The utility of the first three units is positive as the rectangles appear above OX. There is no rectangle with respect to the fourth unit which shows that it does not yield any utility. Rectangle concerning the fifth unit goes down the line OX showing that the utility becomes negative.

Marginal Utility and Law of Diminishing Utility

In the statement of the law of diminishing utility, we were all along considering the *marginal utility*. According to that law, the utility of each successive unit goes on diminishing as consumption is continued. This "successive" unit is the "final" or the "marginal" unit at that particular moment. As such, we can otherwise describe the law as follows : *The marginal utility of a commodity goes on diminishing as its consumption goes on increasing, other things remaining the same.* The law of diminishing utility is sometimes called the *law of diminishing marginal utility* for the sake of clarity and precision.

§3 TOTAL UTILITY

The sum total of the utilities of all the units of a commodity consumed at a particular time is known as *Total Utility*. If you eat five oranges at a time, the sum total of the utilities of all the five oranges will be the total utility of the oranges. If, of the five oranges consumed, the utility of the first unit of orange is 100, of the second 80, of the third 60, of the fourth 20, and of the fifth 10, then the total utility of oranges will be $(100+80+60+20+10) = 270$.

As we consume more and more of a commodity, the total utility derived from its consumption goes on increasing ; but this increase takes place at a diminishing rate (or less than proportionately) because of the operation of the law of diminishing utility. For instance, if the utility of the first unit of orange is 100, the utility of the second unit will be only 80 ; so that when two units are consumed, the total utility comes to 180 only, and not to 20 which is the corresponding proportionate figure.

Oranges	Marginal Utility of Oranges	Total Utility of Oranges
1	100	100
2	80	180
3	60	240
4	20	260
5	10	270
6	0	270
7	-20	250

According to the above table of the utility of oranges, if only one orange is purchased, we get 100 units of marginal utility and since it is the only unit consumed, the total utility is also 100. If the second orange is also consumed, then 80 units of utility are added to 100 units of utility given by the first orange, the total utility thus coming to 180. Calculations thus made are shown in this table.

An important thing which you must have noticed in the above table is that the total utility goes on increasing just before the arrival of the point of satiety. When the point of satiety is reached, the total utility remains the same as before—nothing is added to it nor anything is deducted from it. After the point of satiety is reached, total utility begins to fall.²

²The reader should remember that total utility is not taken into account while discussing the law of diminishing utility. The latter is concerned only with marginal utility. It is the marginal utility of a commodity, which goes on diminishing as the stock of that commodity goes on increasing.

§ 4. TOTAL UTILITY AND MARGINAL UTILITY

It is interesting to learn the relation between marginal utility and total utility at this stage. So long as the point of satiety is not reached, marginal utility goes on diminishing; while the total utility goes on increasing though at a diminishing rate. At the point of satiety the marginal utility becomes zero; but the total utility becomes maximum, full satisfaction having been achieved. *Hence it is said that when marginal utility is zero, the total utility is at its maximum.* After the point of satiety is reached, the marginal utility becomes negative and the total utility begins to fall. If the reader refers to the tables and diagrams given above, he will be able to understand the relationship between total utility and marginal utility quite easily.

Marginal Utility, Total Utility and Demand

We have seen above that as we consume more and more units of a commodity, the marginal utility of that commodity goes on declining while total utility goes on increasing up to a certain point. During this time, what is the effect on demand?

It is clear that as consumption is continued our demand for successive dose goes on declining. This for an obvious reason which will become clear later on. Briefly, demand depends upon marginal utility; and as marginal utility declines, demand also goes down. As such as we consume more and more of a commodity, our demand for it goes on declining along with a decline in its marginal utility.³

Role in Determining Price

We have seen the distinction between marginal and total utility. When we discuss the problem of the determination of price under 'Exchange', we will find that price depends upon (i) utility and (ii) cost. Which is this utility which determines price? Is it marginal utility or total utility? Obviously, it is the marginal utility. For the price that a man is prepared to offer per article is equal to the utility of the last unit he intends to purchase, i.e., marginal utility. Total utility is irrelevant in this connexion. This is really a problem of theory of value and will be discussed in detail under Exchange.⁴

TEST QUESTIONS

1. What is the relation between utility and want? How do you measure utility?
2. What do you mean by marginal utility and total utility? Give illustrations and diagrams to explain your points.
3. State the law of diminishing utility. Does it take into account total utility?
4. When marginal utility is zero, the total utility is at its maximum. Show how.

EXAMINATION QUESTIONS

U.P. Board

1. Discuss with examples the relation between the marginal and total utility. (I.A., 1915)
2. When we consume more and more units of any commodity, (a) the marginal utility of that commodity diminishes, (b) total utility increases, and (c) our demand for that commodity decreases. Explain and illustrate the above with examples and diagrams. (I.A., 1944)
3. Prove that the total utility of a quantity of a commodity is maximum when its marginal utility is zero. Use a diagram to explain it. (I.A., 1938)
4. Explain the difference between marginal and total utility. Which of these helps in determining price? State and explain. (I.com., 1945)

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5. Fully explain 'marginal utility' and 'total utility' and show how total utility is greatest when marginal utility is zero. (I.A., 1945)
6. Explain Marginal Utility and Total Utility. Clearly explain the Law of Diminishing Utility. (Rajputana, 1933)

³See Chapter 46, *post.*

⁴See Chapter 47, *post.*

CHAPTER 15

THE LAW OF EQUI-MARGINAL UTILITY

The Utility analysis is nothing more than a schematic and very abstract account of this process of making these choices.—Davidson

Man's income is ordinarily limited while his wants are innumerable. His income suffices to satisfy some, but not all, of his wants; and he tries to spend it in such a way as to obtain the greatest amount of pleasure and satisfaction. A man makes this endeavour almost instinctively and without any conscious effort. This he does by arranging the various articles required by him in order of their utility; and by spending money on them in that order—the article affording the greatest utility (in return of a unit of money) coming first, and the one yielding the smallest utility (in return of the same unit of money) coming last. If a man spends his money strictly in this order, he will discover in the end that the utility of the last unit of money that he spends on various objects is, more or less, equal. It is called the Law of Equi-marginal Utility. It may be stated as follows: Maximum satisfaction out of the expenditure of a given sum can be obtained if the utility derived from the last unit of money spent on each object of expenditure is, more or less, the same.

Law of Substitution in Consumption. Another name of the law of equi-marginal utility is law of substitution. Since according to this law, we substitute the article which gives us greater satisfaction for the one which gives us less satisfaction, this law is called law of substitution. But this sort of substitution is made under production, exchange, distribution and public finance also. Consequently we call this law, law of substitution in Consumption, in order to suggest that we are speaking of it in connection with consumption.

Illustration

Let us illustrate the law by a concrete example. Suppose a man goes to the market with Rs. 4 in his pocket, which he wants to spend on oranges, caps and milk; and the utility he expects to derive from each unit of four annas spent on the various heads is as follows:

Utility derived from the 4 anna units spent on :

4-anna Units			
	Oranges	Caps	Milk
1st	10	13	11
2nd	8	12	9
3rd	7	10	6
4th	5	8	5
5th	4	6	4
6th	3	4	2
7th	2	3	1

The purchaser will spend the first unit of four annas on the object which will give him the greatest satisfaction. In this case the cap is such an article—the utility of its first unit is 13 which is maximum. Guided by the same motive, he will spend

the second unit on the second cap. The third unit will be spent by him on milk ; and the fourth on oranges. In this way he will go on spending money. The following table indicates the order in which he will spend the four rupees he has got with him :

4-anna Units	Object of Expenditure	Utility derived
1st	Cap	18
2nd	Cap	12
3rd	Milk	11
4th	Orange	10
5th	Cap	10
6th	Milk	9
7th	Orange	8
8th	Cap	8
9th	Orange	7
10th	Cap	6
11th	Milk	6
12th	Orange	5
13th	Milk	5
14th	Orange	4
15th	Cap	4
16th	Milk	4
Total Utility derived from Rs. 4		122

The above table shows that he will spend 5 units of four annas on oranges, 6 on caps, and 5 on milk, and will in total derive 122 units of utility. This is the maximum satisfaction that he can obtain out of his expenditure. If he does not follow this

scheme of expenditure, he will not be able to derive this much of total utility. For instance, if he spends 6 units on cap, only 3 units on oranges and the remaining 7 units on milk, the total utility he will derive will come to $(13+12+10+8+6+4+10+8+7+11+9+6+5+4+2+1)=116$ units only. Other variations may well be tried by the reader ; the result will be the same.

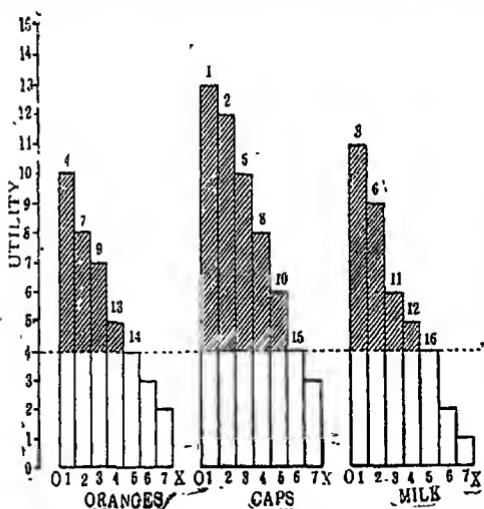


Fig. 14. Illustrating the Law of Equi-marginal Utility.
(Figures above rectangles represent the order in which the 4-anna units are spent.)

If you closely mark the first table, a remarkable fact will impress you at once, the fact that the utility derived from the last unit of money spent on each head is equal, viz., 4. The expenditure of money on various heads in order of utility brings about this result.

It has, therefore, been formulated that if we want to derive maximum satisfaction out of our expenditure, we should spend our money in such a way as to derive, more or less, the same satisfaction from the last unit of money spent on each head. This is the *Law of Equi-marginal Utility*.

Diagrammatic Representation

The Law of Equi-marginal Utility can be represented by a diagram. The above example can be represented as below :

The three sets of rectangles represent the utility derived from the expenditure of 4 annas on oranges, caps and milk respectively. OX axis has been divided in each case into equal parts representing successive units of money spent on the particular item ; and the rectangles standing over them represent the utility derived. The dotted line is the line of 4-anna utility. So many annas are spent on each item as the rectangles cut and touched by this line. The portion of rectangles standing above this line (shaded in the diagram) represents the Consumer's Surplus. This can be made maximum only if the above order of expenditure is followed.

Scope of the Law

The Law of Equi-marginal Utility as stated above applies not only to the expenditure of money but to several other cases as well. It can be made to apply to a commodity which has several uses. For instance, if we have 20 yards of cloth, we can use it for the preparation of shirts, or underwears or *kurtas* or caps. The wise course will be to distribute cloth on these various uses in such a manner as to derive, more or less, the same utility from the last unit of cloth devoted to each item. By applying the law of equi-marginal utility to this case, we can derive maximum satisfaction.

This law also applies to the present and future uses of a commodity. We should distribute a commodity over the present and future uses in such a manner that the marginal utility from each use may be, more or less, the same. This remark applies to the allocation of income between expenditure and saving as well.

Due to the wide applicability of this law, Marshall states in its more general terms as follows : "If a person has a thing which can be put to several uses, he will distribute it among these uses in such a way that it has the same marginal utility."¹

Importance of the Law in Economics

The law of equi-marginal utility is very important in Consumption, as can be gathered from the above account. It is, however, not confined in its application to this branch of Economics alone. It is equally important in the field of Production where the producer is advised, to substitute a cheaper factor of production for a dearer one. For instance, if machinery is cheaper than labour, it is substituted for the latter. It is known as the Law of Substitution in Production. In Exchange, again, purchasers purchase the articles which gives them the greatest satisfaction for the same price and thus try to follow this law. In the sphere of Distribution as well, the law has an important bearing. The theory of equal distribution of wealth, which is the basis of socialistic and communistic movements, is fundamentally based on this law. Finally, in Public Finance it is the guiding principle in the matter of revenue and expenditure. The applications of the law in the different branches of Economics will receive fuller treatment as we proceed further in our studies.

¹Marshall, *Principles of Economics*, p. 119.

Hindrances to the Law

A man, by temperament, tries to derive the maximum benefit from his expenditure and, therefore, tries to follow this law, consciously or unconsciously. There are, however, certain forces and factors which hinder the operation of this law in practical life. *Firstly*, a man may not be able to find out the utility he may derive from the expenditure of various units of money spent on various heads. This may be due to ignorance or due to the absence of calculating habit. *Secondly*, even if he does not suffer from this deficiency, he may not like to do it through carelessness or because he may think that all this calculation is not worth the trouble involved. *Thirdly*, even if all this calculation is done, the market price of different commodities may change and upset his entire calculation. He may well assume that the price of mangoes will remain 12 annas a dozen and that of oranges 6 annas a dozen, but he may actually find that the prices of both of them have drastically changed.² *Finally*, customs and fashion also *sometime* hinder its operation. This point we have discussed in detail below. The practical operation of this law is, as such, interfered with by the above intruding factors; though it obtains in actual life with substantial vigour.

Effect of Customs and Fashion on the Law

Sometimes it is said that customs and fashion have an effect on the operation of the law of equi-marginal utility. This statement requires close examination.

Customs sometimes make the consumption of an article compulsory. It may be that the consumption of that article affords little satisfaction to an individual and, according to the law of equi-marginal utility he will like to consume another article in its place, so as to get greater utility. But customs might be so strong that he may not dare do so. In that case he may not be able to follow the law of equi-marginal utility. For instance, in a religious ceremony, a Hindu has to pay a certain amount, in the shape of Dakshina and otherwise, to the priest. If he were to spend that sum on the purchase of, say, cloth or sweetmeats, he would get greater satisfaction. But the force of custom is so strong that this cannot be done. The law of equi-marginal utility is thus interfered with.

If a man follows a fashion against his wish, the same result would follow, i.e., the law of equi-marginal utility will be disturbed. A college student may not like to buy a tie but to purchase butter instead; but it may be a fashion to have at least one or two ties and he might have to purchase a tie. In this case, he would spend money on an article which gives him less satisfaction and not on the other which would yield greater satisfaction. This would be against the law of equi-marginal utility.

It should be clearly remembered, however, that the law of equi-marginal utility will be disturbed in practice *only if one has to follow a custom or a fashion forcibly and against his wish*. If a man respects custom or fashion, it means that expenditure according to either of them gives him considerable satisfaction in accordance with the law of equi-marginal utility.

In actual practice in this country, only few people are prepared to break customs; but most of them willingly follow a fashion. This applies at least to educated persons. We can, therefore say that in actual practice while custom interferes with the law of equi-marginal utility fashion does not disturb it. But this statement is true in a very general sense and applies to educated persons only.

²If the price rises, the amount of commodity that can be purchased for a unit of money will decrease and marginal utility of that commodity will follow suit. Opposite results will happen in the case of a decrease in price.

TEST QUESTIONS

1. Explain and illustrate the law of Equi-marginal Utility. Represent it diagrammatically.
2. Is the Law of Equi-marginal Utility applicable to a large number of practical problems? Discuss fully.
3. Show the importance of the Law of Equi-marginal Utility in Consumption, Production, Exchange, Distribution and Public Finance.
4. Does an average man follow the Law of Equi-marginal Utility in practice? What are the hindrances disturbing its operation?

EXAMINATION QUESTIONS

U. P. Board

1. Explain that the expenditure of our income is governed by the law of equi-marginal utility. (I. A., 1945)

2. You have two rupees to spend on three commodities, A, B and C. How would you distribute your money between them if their marginal utilities are as given below and each unit of a commodity costs annas two? Give reasons for your answer:

A	50	45	89	84	80	25	21
B	40	38	35	31	26	20	14
C	88	82	27	23	19	15	10

(I. A., 1940)

3. "Economic expenditure involves distributing the income in such a way as to secure the greatest possible amount of satisfaction." Explain and give examples. (I. A., 1939)

4. What advice would you give to your sister in the matter of the regulation of her domestic expenditure with a view to maximum satisfaction. (I. A., 1938)

5. State clearly the law of satiety of wants. Can you deduce from it any law for the guidance of people's expenditure? Illustrate by an example. (I. A., 1930)

6. What practical advice could you give to a coolie or a common peasant who may seek for your guidance in the matter of his regulation of expenditure? Give examples. (I. A., 1929)

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7. State and explain the Law of Equi-marginal utility. How does this guide day to day expenditure of a person. (I. Com., 1944)

8. Explain the Law of Substitution in consumption and show how it is modified by the influence of custom or fashion. Give examples from India. (I. A., 1944)

9. Explain the law of Diminishing Utility. A house-wife has an income of Rs 15. The utilities measured in annas of the successive units of the articles to her are as follows:

Of bread	28,	26,	20,	16	annas
Of meat	24,	20,	16,	10	annas
Of tea	22,	18,	6,	2	annas
Of sugar	20,	17,	16,	6	annas

If each unit costs Re. 1, how many rupees would she spend on the various items? Would she save any rupee? (I. A., 1938)

Patna University

10. Explain with examples the principle of equi-marginal utility. (I. A., 1942, Annual)

11. Explain the principle of Substitution in relation to consumption and production.

(I. Com., 1944, Supp.)

12. On What principles should a person regulate his expenditure in order to obtain the maximum satisfaction from it ? How far does custom or fashion stand in the way of following the principle ?
 (I. Com., 1942, Annual)

Other Examining Bodies.

13. I have twenty-one *laddus*. I wish to distribute them among four persons A, B, C, and D, in such a way as to get maximum utility. The marginal utilities of the *laddus* to each of the persons are noted below. State how I should proceed to distribute the *laddus*. How many will each obtain ? What will be their total utility ?

	1	2	3	4	5	6	7	8
A	15	18	11	9	7	5	3	1
B	20	16	13	10	8	4	1	—
C	18	10	7	4	2	1	—	—
D	25	21	18	15	12	8	6	3

(Punjab, I. A., 1937)

14. "Economic expenditure involves distributing the income in such a way as to secure the greatest possible amount of satisfaction." Explain and give examples. (Delhi, I. A., 1939)

15. The following table shows the utilities derived by a person by spending money per week on butter and sugar

Pence	Aggregate utility of butter	Marginal utility of butter	Aggregate utility of sugar	Marginal utility of sugar
1	10	10	9	9
2	18	8	16	7
3	24	6	20	4
4	29	5	28	3
5	32	3	25	2
6	34	2	26	1

(a) Suppose this person had 9 pence a week to spend on butter and sugar. How should he lay it out on these two articles so as to get the maximum amount of satisfaction ?

(b) Is there any economic law according to which such distribution is made ? (Delhi, I. A. 1935)

CHAPTER 16

CONSUMER'S SURPLUS

Only where the stage has been reached of possible comfort of some choice in the direction of expenditure, can there be anything in the nature of a real surplus of satisfaction for the consumer. *Tawssig.*

When we purchase a commodity for consumption, we hope to gain some utility by consuming it; at the same time, we lose some utility in the shape of the price we pay for it. In the beginning the utility thus gained happens to be more than the utility thus lost; and we usually go on purchasing a commodity so long as the utility derived continues to exceed the utility lost. The utility derived from successive units of a commodity, however, goes on diminishing by and by and sooner or later the utility derived equals the utility lost, at which point we stop our purchases. It will be unwise to push purchases beyond this stage since we now stand to lose more utility than what we can gain.

Now, in the case of each unit purchased, except the last one, we have derived more utility than what we have lost. The surplus utility or satisfaction, which is thus acquired by the consumer, is known as the 'Consumer's Surplus'. Consumer's surplus can be defined as follows : "Consumer's surplus obtained by a person from a commodity is the difference between the satisfaction which he derives from it and that which he foregoes in order to procure that commodity"¹

The satisfaction that a consumer obtains from the consumption of an article may be measured by the price he would have paid for it rather than go without it; while the satisfaction he loses in procuring a commodity is measured by the price he actually pays for it. As such, the consumer's surplus is sometimes defined as the excess of what a consumer would pay over what he actually pays.

Further Explanation

The concept of consumer's surplus can be explained by four definite statements which are joined to one another connectively. They are as follows : (1) That we derive greater utility from the earlier units and less from the latter units. (2) That the price that we pay for each unit remains the same, for the same price rules for each unit of a commodity in a market. (3) That we stop our purchases when the utility of the thing purchased equals the price paid for it. (4) Hence in the case of all the units, except the last one, a surplus of utility shows itself, which is called consumers' surplus.

When we purchase several units of a commodity, the utility of each unit (except the last) exceeds the utility of the last unit. The utility of the last unit purchased can be measured by the price paid per unit. It follows, therefore, that the utility of each unit of the commodity (except the marginal unit) is greater than the money paid for it; in other words, a purchaser derives a surplus utility from the purchase of all the units except the last one. This surplus utility is known as consumer's surplus.

Consumer's surplus is mathematically expressed as follows :

$$\text{Consumer's Surplus} = \text{Total Utility} (\text{Marginal Utility} \times \text{No. of units purchased}),$$

or, C. S. $= T. U. (M. U. \times n)$

¹J. K. Mehta, *Groundwork of Economics*, p. 52.

Where T. U. is Total Utility ; M. U. is Marginal Utility ; and n is the number of units purchased. This is the way in which we can measure consumer's surplus.

Illustration

Suppose a man goes to the market, with 5 annas in his pocket with a view to purchase some oranges. He thinks that the utility of the first orange will be equal to 30 annas ; of the second, 20 annas ; of the third, 10 annas ; of the fourth, 5 annas ; of the fifth, 1 anna ; and of the sixth, zero. In the market the price per orange is, say one anna per unit. Now he will purchase the first four oranges without any hitch because the utility of each of them exceeds one anna which he will have to pay per unit. He will also purchase the fifth orange : he will derive one anna worth of utility from it, which is also its price ; but he will stop his purchases at this point. In this case then, he will derive the consumer's surplus as shown in the following table :

No. of Units	Utility per Unit	Consumer's Surplus per Unit
I	30 annas	$30-1=29$ annas
II	20 do.	$20-1=19$ "
III	10 do.	$10-1=9$ "
IV	5 do.	$5-1=4$ "
V	1 anna	$1-1=0$ anna

Total Consumer's Surplus=61 annas.



Fig. 15. Illustrating the Consumer's Surplus.
(The shaded portion represents consumer's surplus.)

In the case of the first orange he derives utility worth 30 annas, but he pays only one anna for it. The surplus utility in this case is 29 annas. In the case of second orange similarly consumer's surplus is 19 annas ; and so on. The total surplus is 61 annas. This is the consumer's surplus.

Diagrammatic Representation

The concept of consumer's surplus illustrated in the above example is represented diagrammatically :

In this diagram oranges are represented by OX axis and the utility along OY axis. OX axis is divided into OA, AB, BC, CD and DE, each division representing one orange in order. The rectangle standing over each of them represents the utility that each of them yields. The line RS measures the price per mango. The portion of each rectangle standing above this line represents the surplus utility. This portion is shaded in the diagram. This entire shaded portion represents the consumer's

surplus.² The marginal unit does not yield any consumer's surplus.

Marshall's Explanation

In explaining the idea of consumer's surplus, Marshall, who is the father of this concept, mentions that the price which a person pays for a thing can never exceed, and seldom comes up to that which he will be willing to pay rather than go without it; so that the gratification which he gets from its purchase generally exceeds that which he gives up in paying away its price and he thus derives from the purchase a surplus of satisfaction. The excess of price which he would be willing to pay rather than go without that thing over that which he actually pays, is the economic measure of this surplus satisfaction. It has some analogies to rent, but is perhaps best called consumer's surplus.

It is obvious that the consumer's surplus derived from some commodities is much greater than that from others. There are many comforts and luxuries of which the prices are very much below those which many people would pay rather than go entirely without them; and which, therefore, afford a very great consumer's surplus. Good instances are matches, salt, an one-anna newspaper, or a postage stamp.³

Importance of the Concept

The idea of consumer's surplus is of enormous importance in Economics, both from theoretical as well as practical points of view.

The theoretical importance of this concept is that it reveals what substantial benefits we derive from our surroundings or environments in the daily life without

²If we substitute a divisible commodity, say milk, for oranges which are Indivisible, our diagrammatic representation will be in the form of a curve as shown here;

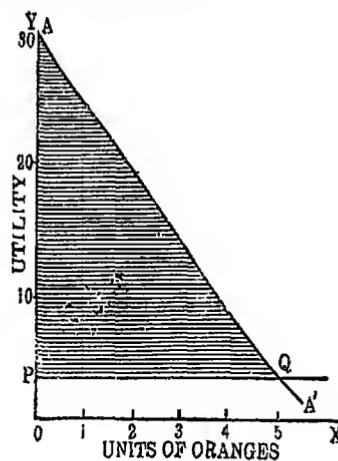


Fig. 16.

AA' curve is the utility curve. PQ line represents the price paid for five units of Milk. The shaded area is the consumer's surplus.

³Marshall, *Principles of Economics*, p. 124. This benefit, Marshall continues, may be called the benefit which he derives from his opportunities, or from his environments; or to recur to a word that was in common use a few generations ago from his *consumptus*. *Ibid*, pp. 124-25.

being conscious of the same. When we purchase a newspaper, we pay only one anna for it ; similarly we pay one pice for a match box. But hardly do we realise that the utility of these things is so great that we may be willing to pay, say, ten rupees for each of them rather than go without them. The consumer's surplus derived from the newspaper is, then, equal to Rs. 9.15-0 and that from match box to Rs. 9.15-9.

From the practical standpoints its importance lies in showing the comparative satisfaction achieved by a particular class of persons in various countries of the world ; or the comparative position of the various classes of people in the same country from the same viewpoint. For instance, an Indian may be getting only Rs. 100 p. m. in India, while he may be able to earn Rs. 200 in Australia ; but it may be that Rs. 100 in India may afford him greater consumer's surplus than Rs. 200 in Australia. In such a case it will be wise for him to stay in India. This concept is also useful in finding out the effects of certain taxes on different classes of society. When a tax is levied, the price of the article generally rises. Since consumer's surplus is the excess of the price that a man will pay rather than go without it over the price he actually pays for it, a tax equal to this entire surplus can be imposed. The loss of consumer's surplus due to the imposition of various taxes can be calculated ; and the Finance Minister can, then choose those taxes which inflicts the least injury to the consumer's surplus in proportion to their yield. Again, the consumer's surplus derived from necessities is greater than that derived from articles of comforts or luxuries ; and consequently heavier taxes can be levied on necessities than on comforts and luxuries from purely financial point of view.

TEST QUESTIONS

1. Explain the concept of "Consumer's Surplus". Illustrate it diagrammatically.
2. What, in your opinion, is the importance of the concept of "Consumer's Surplus".

EXAMINATION QUESTIONS

U. P. Board

1. Explain consumer's surplus, and discuss its importance. (I. Com., 1948)

Rajputana Board

1. Write a short note on consumer's surplus. (I. A., 1948)
2. What is consumer's surplus ? How is it measured ? Why does it arise ? (I. A., 1941)
3. What is 'Consumer's Surplus' ? Why does it arise, and how is it measured ? (I. A., 1936)

Other Examining Bodies

1. Examine the concept of consumer's surplus and discuss how far the surplus is substantial. What is the importance of this concept in Economics ? (Bombay, I. A. 1940)
2. How do you account for the fact that "the most useful commodities such as bread, salt and water are very cheap" ? State your answer in terms of the general economic law on the subject. (Bombay, I. Com., 1939)

CHAPTER 17

THE STANDARD OF LIVING

Sanitation, in any accepted sense of the word, is practically nonexistent. The public latrine is too often the bank of a river or the margin of a tank.....Unprotected wells and tanks, unswept village streets, close pent up windows excluding all ventilation—in such conditions does the average villager live, and yet observes a remarkably high standard of personal cleanliness and tidiness.—*Linlithgow Report*.

After studying wants and utility, we may now turn our attention to the subject of *Standard of Living*. The quantity and quality of everything that a man consumes is reflected in his standard of living. Standard of living of a person is, as such, the index of his economic progress. On the same reasoning it can be shown that the standard of living of a nation is the true measure of its economic progress. It is, therefore, important to study the subject of standard of living.

§ 1. STANDARD OF LIVING

Meaning of Standard of Living

Everyone of us consumes certain articles of necessity, comfort and luxury. Through long use we become so much accustomed to them that we feel acute pain if we miss them. The articles of necessity, comfort and luxury, to which a man becomes habituated, constitute his standard of living. Otherwise expressed, *standard of living signifies the wants that one habitually satisfies*.

It follows from the above that the standard of living is, more or less, a matter of one's habit, and, therefore, does not change quickly and easily. Habit, the so-called second nature of man, does not change soon ; and the standard of living of a person is more or less fixed. It is, however, comparatively easy to raise the standard of living than to lower it.

In our daily life we often hear and talk about standard of living. Usually this term is used in a comparative sense. We occasionally say that the standard of living of an Englishman is higher than that of an Indian, and the standard of an American is superior to that of an Englishman. A higher standard of living signifies the satisfaction of a larger number of, and more wisely selected wants ; whereas a lower standard of living signifies the satisfaction of few wants which may be unwisely chosen. Obviously, the higher standard of living leads to a richer, fuller and materially happier life, while a lower standard of living results in poor, incomplete and materially inferior life.

Factors Governing the Standard of Living

It is, therefore, the endeavour of every individual and nation to achieve a high standard of living. But, what are the factors on which the standard of living depends ? These factors are mainly two : (i) the amount of income spent, and (ii) the wisdom with which it is spent. Other things being equal, a rich man is in a position to satisfy a larger number of wants than a poor man, and therefore, has a higher standard of living. Again, of the two persons, who have equal incomes, the one who spends his money more wisely will have a higher standard of living than the other.

Evidently, excellence or otherwise of the standard of living does not depend only on the income of a person ; wisdom in expenditure is another important factor. An

expensive standard of living, in other words, is not necessarily, a high standard of living. An illustration may be given to explain this point. Suppose Atma Ram earns Rs. 200 per month whereas Babu Ram earns only Rs. 100 per month. Atma Ram may be a reckless fellow, spending money on thoughtless objects. He may be addicted to drinking, cinema and such other habits which may consume about half of his income or even more. He may spend the rest of his income in a similarly careless fashion, in taking food at hotels, on showy and costly clothes and in consuming cheap luxuries. The quality of his total consumption is obviously inferior; his standard of living will be called rather poor. Babu Ram, on the other hand, may be very wise in the matter of expenditure. He may spend a fair part of his income on healthy and nutritive diet, may live in an open house and may wear clean, tidy and durable clothes. He may also spend something on education and save a little for the "rainy day." His standard of living is, without doubt fairly high. In this illustration, then, though Atma Ram earns twice as much as Babu Ram, still the standard of living of the latter is superior to that of the former; because Babu Ram spends his income very wisely, whereas Atma Ram spends it very carelessly. Therefore, it is wrong to argue that a costly standard is necessarily a high standard. Unless other things are supposed to be equal, the expensive standard must not necessarily be a high standard.

Importance of a High Standard of Living

In modern times all of us try to maximize our *material welfare*; that is why the present age is often described as the "Age of Materialism". True to the spirit of the times, individuals and nations believe that a high standard of living is an ideal which should be tried to be achieved and striven for. Whenever any individual finds that he can increase his income and raise his standard of living in some way or the other, he generally tries to make use of the opportunity. Indeed, there are persons who do not even produce children so that they may be able to maintain a high standard of living. As has been wittily remarked, a new couple has to choose between a car and a baby; and often the car wins! What is true of an individual is also true of a nation. The modern nations try to harness all the natural resources like waterfalls, forests, mines, fisheries, etc., and use other methods to make their people richer than what they are. A nation believing in a high standard of living exploits its resources to the maximum degree in the productive operations, thus paving the way for the maximum consumption for its members. In fact, a higher or lower standard has become the index of an advanced or a backward nation respectively.

There are, however, certain thinkers who do not attach much value to material progress; and to whom the spiritual advancement, the advancement of soul and mind, is the only worthy ideal to be followed. Such people do not believe in a high standard of living. On the other hand they stick to the principle of "simple living and high thinking". Mahatma Gandhi and Tolstoy are representative thinkers of this school. From an economic viewpoint, it can be stated, by way of criticism, that this attitude is not helpful for material progress and does not, therefore, receive the sanction of economists. Even from a broader standpoint this ideal becomes, at its best, merely theoretical. In these days of dire materialism, when human blood is spilt more carelessly than water for achieving material objects, no country can hope to keep its head high unless it is materially strong. The younger generation of India does not, therefore, agree with the Gandhian ideal.

§ 2. STANDARD OF LIVING IN INDIA

A Quantitative Estimate

India is one of the poorest countries in the world; and, as may well be expected, the standard of living of its people is very low. The income *per capita* (i.e., per head)

in this country shows the extent of prevailing poverty. The following table gives the estimates of the income per head given by different economists from time to time :—

Year for which estimate is made.	Estimated by	Income per head in Rupees		
1868	Dadabhai Naoroji	...	...	...
1897-98	Lord Curzon	...	...	80
1911	Sir B. N. Sarma	...	...	50
1921	Shah Khambatta	...	...	74
1918-14	Wadia and Joshi	...	...	44
1910-14	Vakil and Muranjan	...	...	58
1931	Findlay Shirras	...	...	68
1937-38	Sir James Grigg	...	...	56
1925-29	V. K. R. V. Rao	...	...	76
1931-32	V. K. R. V. Rao	...	...	62

Note 1.—The table includes only important estimates.

The difference in various estimates is due to the difference in the methods of calculation ; but they all go to show that our standard of living is not high.

The smallness of income per head of the people of this country can be better realised when it is compared with the corresponding figures of other countries of the world. The following table gives the comparative figures :

Country	Per capita income	Year of the estimate
British India	7	1931
Australia	98	1924
U. S. A.	89	1932
United Kingdom	76	1931
Germany	39	1925
Italy	24	1927
Japan	14	1925

The dire poverty of the people imposes a rigidly low standard of living. When a man has to support himself, his wife, his children and possibly his parents at less than Rs. 10 per month, the diet of the family will be inevitably ill-balanced and insufficient ; the housing condition obviously unsatisfactory ; clothing naturally bare and inadequate ; and other wants necessarily starved. Sir John Megow aptly observes, "It is useless to tell people to drink more milk, or to eat more fruit and vegetables, unless we can show them how these articles can be obtained in addition to and not instead of

part of the usual diet. Already many people cannot obtain enough rice and other bulky cheap foods to satisfy their hunger. To suggest expensive goods to these people would be just as reasonable as the remark attributed to Queen Marie Antoinette who, when told that the people of Paris were clamouring for bread, was said to have replied, 'If they have no bread, why don't they eat cake'.¹

A Qualitative Estimate

The poverty being so great and widespread, people of India are able to satisfy very few wants. Let us first take the case of necessities. *Necessaries for existence* are available to the majority of the people, though this want is not always fully satisfied. There are thousands of persons in the country who get food only once a day, and even that is very rough and poor.² Clothing is a luxury to many, and it is only in winters that ragged and insufficient clothes appear on their person. The poor cannot afford to purchase woollen clothes and thank their stars if they have enough of the cotton ones. In the matter of housing in particular, special difficulty is faced. The villagers live in untidy mud-hovels; while the labourers spend their lives in dirty and overcrowded quarters where their moral and material degradation is almost terrific. It is, indeed, a sad fact to confess that thousands of our countrymen do not get even adequate necessities for existence. So far as *conventional necessities* are concerned, they are almost compulsory in character in our custom-ridden country. It is seen that at times people purchase conventional necessities even at the cost of necessities for existence. *Necessaries for existence* and conventional necessities are the ones that are satisfied by an average Indian first and foremost. His resources are so slender that hardly anything is left to be spent on *necessaries for efficiency*. As Moreland observes, "Very large numbers are unable to provide for education or medical treatment while healthy dwelling houses are rare, specially in the towns. A large population of the artisans and labourers and even of small cultivators possess insufficient clothing for cold weather; while in many parts of the country the food of the labourers is not sufficient to enable them to do a full day's work".³

We now pass on from necessities to *comforts* and *luxuries*. An average Indian has now begun to consume certain articles of comfort and luxury, partly because of their cheapness and partly because of his increased knowledge such as better means of communication, which newspapers and urban habitation daily bring home to him. In fact, he is as much drawn to things like Japanese toys, creep-sole shoes and artificial silk that he cannot check the temptation of purchasing them. His income being what it is very often he has to sacrifice the articles of efficiency for satisfying his fancy. Our countrymen are doomed to a low standard of living not only because of their poverty but also because of their ignorance. They do not have the capacity to marshall their expenditure wisely, thus failing to derive even that satisfaction which can possibly be had.

Effects of Low Standard of Living

The inadequacy and injudiciousness of consumption of the people of India result in various evils. People who hardly get the bare necessities are bound to

¹Sir John Megow, *Social Services*, p. 210.

²In several parts of northern India the industrial workers cannot afford anything more than the parched gram and coarse sugar for the midday meal, generally consisting of wheat flour, cakes and lentils, vegetables, oil, ghee and fruit enter but little into their dietaries. In the rice-eating areas, as Madras, the position is not substantially different; a meal of cold rice (boiled the previous night) with salt for breakfast, rice and lentils midday and repeated at night; with very few vegetables, practically no fruit, milk or ghee—Shiva Rao, *The Industrial Worker in India*, p. 67.

³Moreland, *An Introduction to Economics*.

develop weak constitution. They remain inefficient at their occupation and earn low wages. What more, they fall an easy victim to the various minor and major diseases, which either prove fatal or render them weaker still. Children of such physically bankrupt persons are also very weak and inefficient. Many of them swell the figures of the infantile mortality, while the survivors are made worthless by the want of proper nourishment and sufficient clothes, of proper education and necessary training. When they grow to manhood, they join the rank of unskilled labourers earning just a few annas per day, if they luckily get a job somewhere. Their poverty leads to their inefficiency, and their inefficiency to their poverty. This is the vicious circle in which the masses of the country have been enveloped, and from which an escape must be made. It will, therefore, be instructive to study the causes of the low standard of living in India.

Causes of Low Standard of Living

(1) The most obvious and the most important cause of the low standard of living is the *poverty of the masses*. As shown above, people are so poor that they sometimes find it difficult even to keep their body and soul together.

(2) *Illiteracy of the masses* is also an important cause. Wants increase with a spread of knowledge. The absence of literacy among the masses narrows down their vision to such a great extent that many of them find themselves perfectly satisfied. But there is graver danger which illiteracy has brought about. This is the danger of unwise expenditure which is very often met with in our villages and industrial centres. Much expenditure on superficial festivities, on marriage and death and litigation, on drinking and cheap knick-knacks, can be curtailed with a salutary effect on the standard of living.

(3) *Customs and fashion* have a determining influence on the standard of living. A man's demand for goods depends upon the mode of life which custom and fashion in his class of society have made him accustomed to, and much less upon his individual tastes and liking. A professor and a businessman, having the same income, are bound to have different types of living. The professor will dress himself well, live in a decent house, have a good library and give himself up to occasional recreation like cinema-shows by way of mental diversion ; while the businessman will devote a better part of his time, money and energy in promoting his business connections, himself leading a simple life with as few diversions from business as possible.

(4) *The religious and social ideals* of the country also favour a life of frugality and simplicity, based on the principle of "simple living and high thinking". The emphasis on this principle by Mahatma Gandhi has increased the importance of this factor as an obstacle to a rise in the standard of living. Under the recent Congress regime, we found Congress Ministers travelling third class, drinking tea for two pice per *kullarh* and riding in *ekkas* for one anna per passenger. The example thus set by them has had a lasting effect on certain sections of the people.

(5) *Absence of adequate and efficient means of communication and transport* and the lack of contact between the backward and progressive sections of the country are the other causes of the low standard of living in this country.

(6) *Physical factors* are also partly responsible for the low standard of living. Due to hot climate, people have few wants. The wants for clothes is not pressing since during the summers practically no clothes are necessary, while during the winters the warmth of the burning fire keeps the body active. Big houses are not essential, since court-yards inside or in front of the houses are quite comfortable in summer, while the accommodation of all the inmates in a few rooms in winter does not appear to be unpleasant.

THE STANDARD OF LIVING

How to Raise the Standard of Living ?

Our standard of living can be raised only if we remove the basic causes of the low standard which have been pointed out above. The removal of poverty is, in fact, the most difficult problem to solve. Our economic machinery will have to be entirely overhauled, and in many cases replaced by greater poverty. Efforts should be made to remove the ignorance of the masses. Let the school-master be broad, primary education be made compulsory, and arrangement be made for vocational training. Public health campaigns should also be carried on with a view to impress upon the people the necessity of sanitation and cleanliness. The masses should be made to realize the value of a materially rich and full life and in their heart should be inspired the ray of hope, the herald of the sun of happiness.

Is Our Standard of Living Increasing ?

This has been a debatable and much-debated point in Indian Economics. The official opinion is that this country has been so ably governed that people have materially improved and standard of living has definitely increased. The non-official opinion, on the other hand, holds that our standard of living has been declining; and this is mainly the result of the misgovernment of the country under the British domination. The period of British rule is popularly regarded as the period of economic exploitation which has committed us to the woes of poverty. It is difficult to lay down with definiteness direct evidence, like family budgets or income per capita, are conspicuous by their paucity. Both the groups depend upon day-to-day observations and their political convictions.

The official opinion is based on the following three arguments:

1. Imports into this country have been all along increasing except for a few years. This shows that the standard of living has been rising.

That is, indeed, a wrong argument. If our imports are increasing, it simply means that the consumption of foreign goods is increasing. It does not, in any way, prove that the total consumption of an average Indian is going up. Unless the statistics of the consumption of indigenous goods are also taken into account, such assertion cannot be made.

2. People are consuming luxurious articles, like cars and silk, more than before. As luxuries are usually satisfied after necessities and comforts, the inevitable conclusion is that the standard of living has been increasing.

This argument is again weak, involving, as it does, the fallacy of false generalisation. All the people, or even most of them do not consume such article. It is only a few rich persons who can afford to consume them. What is true of a small part of the population cannot be true of the whole, unless the whole is homogeneous. Moreover, the theoretical assumption that luxuries are always satisfied only after necessities and comforts, is an elementary mistake.

3. People now use better clothes and live in better houses. The mud-hovels are now being replaced by pucca houses and tin-sheds. This shows that the standard of living is rising.

This seems to be a wrong observation. In some cases it may be that poor houses have been replaced by better ones, but on the whole, the condition is not much better than before.

An impartial examination of the problem reveals that the standard of living of the people in urban areas has certainly increased. The use of cars, cinema-shows and many cheap luxuries are now included in the consumption of middle-class town-dwellers. Even

in a town, however, there are slums and slum-dwellers who lead a very miserable and poor life. The towns contain only 10 per cent of the entire population of the country; about 8 per cent of them may be said to have had a high standard. It is, however, the villages where 90 per cent of the people of the country live. Conditions in villages are not better than before; in fact, they have deteriorated in many respects. High land revenue, usurious rates of interest and such other causes have reduced labourers to semi-starvation, which is comparatively a new phenomenon. Obviously, the standard of living of only 8 per cent of the people has increased in recent times while in the case of the remaining 92 per cent it has either not improved or has actually deteriorated.

Standard of Living in the Post-War Period

The Second Great War has ushered in a new era in the thoughts, aspiration and hopes of the people all over the world. Plans of post-war reconstruction and development have been made in almost every country of the world and everywhere the keynote of such plans is raising the standard of living of the masses. Progressive and powerful countries like U. S. A. and U. K. also believe that their own salvation in the post-war period lies in improving the standard of living of the people of backward countries; and countries like India may hope for something definite in this direction. Apart from it, 'Eight Industrialists' of our country have recently published a *Plan for the Economic Development of India*, which envisages the raising of our standard by at least two-fold within 15 years. The reception received by the plan in Governmental and non-Governmental circles augurs well for the future.

This has been followed by the People's Plan and Gandhian Plan. The more important matter than framing a plan is to put into execution; and it is in the latter direction that considerable difficulties exist in India.

TEST QUESTIONS

1. What is meant by 'standard of living'? What are the factors which govern it? Show the importance of a high standard of living.
2. Write an essay on 'The Standard of Living in India'.
3. Has our standard of living been rising? Discuss fully.

EXAMINATION QUESTIONS

1. Discuss intelligently the influence of climate and customs on the standard of living. (U. P. Com., 1938)
2. Write short note on standard of living. (Raj., 1948)
3. Define 'Standard of living.' What is its connection with consumption and production? (Delhi, 1937)

CHAPTER 18

FAMILY BUDGETS

There is perhaps no branch of Economics in which intensive work yields a larger harvest of suggestive returns than the study of statistics of consumption. Any one may enter this field by making a study of the expenditures of the family group to which he himself belongs and by persuading friends to keep budgets of their expenditures in accordance with some simple but uniform plan.—Seeger.

§ I. INTRODUCTION

In a preceding chapter we had discussed how a person can derive the maximum advantage out of his expenditure by following the law of equi-marginal utility. The pursuit of the said law becomes convenient and easy if proper family budgets are maintained; and variations are effected in the nature of expenditure as suggested by the budgets. Family budgets have also other important advantages of considerable and vital economic significance, all of which go to make their study an important subject in Economics. They have been collected in various countries of the world and, valuable information has been drawn from them from time to time.

Meaning of Family Budget

A family budget, it may be stated, consists of a detailed description of the income and expenditure of a family, and has reference to a particular period, a month or a year. It can, therefore, be defined as a detailed statement of the estimates of income and expenditure of a family, relating to a particular period.

Form and Contents of a Family Budget

A family budget begins with a mention of the members of the family in question and the annual (or monthly, as the case may be) income thereof. Thereafter are given in a classified form, the various groups and items of expenditure. The total quantity of each commodity consumed, the price paid, the total amount spent, the percentage that the amount spent on each head bears to the total income, and the remarks, if any, are all given in detail. A rough form follows here :

BUDGET
No. of members (men, women and children, with their ages, to be mentioned).
Annual Income

Items of expenditure	Quantity consumed			Amount spent		Percentage of expenditure to total income	Remarks
	Quantity	In a week or month	Total quantity consumed	Price per unit	Total amount spent		



Fig. 17. Illustrating the expenditure of a family.

by Dr. Engel in the year 1857 in Saxony (Germany). He divided the families living in Saxony into three classes: the labour class, the middle class and the well-to-do class. The main items of expenditure were classified by him into the following groups: (i) Food, (ii) Clothing, (iii) Lodging; (iv) Heat and Light, and (v) Education, Health and Servants. He tried to find out the percentage of income spent by each class of families on the various heads. The result of his investigation is presented in the following table:¹

Items of expenditure	Percentage of its income spent by—		
	Labour class family	Middle class family	Well-to-do class family
1. Food	60	55	50
2. Clothing	18	18	18
3. Lodging	12	12	12
4. Heat and light	3	5	5
5. Education, health and servants, etc.	5	10	15
Total	100	100	100

The most important group of items of expenditure in a family budget is *Food*. The total amount of income spent on food varies from about 5 per cent to about 60 per cent. Clothing is the next important group; about 18 per cent of one's income is spent on this object. *Lodging* claims 12 per cent and *Heat and Light* another 5 per cent of one's income. Education, taxation, health and servants are other items of expenditure.

§ 2. ENGEL'S LAW OF CONSUMPTION

Important studies of family budgets have been carried on in various countries of the world. Probably the most important of such studies was made

by Dr. Engel in the year 1857 in Saxony (Germany). He divided the families living in Saxony into three classes: the labour class, the middle class and the well-to-do class. The main items of expenditure were classified by him into the following groups: (i) Food, (ii) Clothing, (iii) Lodging; (iv) Heat and Light, and (v) Education, Health and Servants. He tried to find out the percentage of income spent by each class of families on the various heads. The result of his investigation is presented in the following table:¹

¹The above table has been simplified from the original given by Engel. As the latter has acted as a

As is clear from the table, Engel discovered that, as the income increases—

- (1) The percentage of it spent on food decreases;
- (2) The percentage of it spent on clothing, lodging, heat and light remains the same;
- (3) The percentage of it spent on education, health and servants etc., increases.

Briefly, it may be stated that as the income of a family increases, the percentage of income spent on food decreases, that spent on clothing, lodging, heat and light remains unchanged and that spent on education, health, servants, etc., increases. This is known as the *Engel's Law of Consumption*.

Diagrammatic Representation

In Fig. 18 on p. 106, the height of the rectangles shows the percentage of income; and their width, the amount of income. The first rectangle is the widest and represents the richest family; the last rectangle is the least wide and represents the poorest family.

guide and a standard of comparison to later inquiries and occupies a unique position in Economics. It may be produced below :

Items of expenditure	Proportions of the expenditure of the family of—		
	1 Workman with an income of 45% to 60% a year	2 Workman with an income of 90% to 120%	3 Middle class person with an income of 50% to 200%
1. Food only	62.0 p. c.	55.0 p. c.	50.0 p. c.
2. Clothing	16.0 p. c.	18.0 p. c.	18.0 p. c.
3. Lodging	12.0 p. c.	12.0 p. c.	12.0 p. c.
4. Light and fuel	5.0 p. c.	5.0 p. c.	5.0 p. c.
5. Education	2.0 p. c.	2.5 p. c.	5.5 p. c.
6. Legal protection	1.0 p. c.	2.0 p. c.	8.0 p. c.
7. Care of health	1.0 p. c.	2.0 p. c.	3.0 p. c.
8. Comfort and recreation	1.0 p. c.	2.5 p. c.	8.5 p. c.
Total	100.0 p. c.	100.0 p. c.	100.0 p. c.

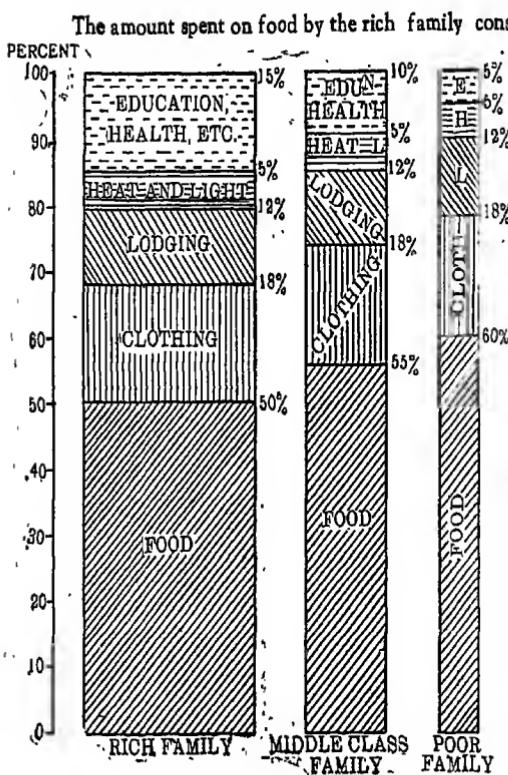


Fig. 18. Illustrating the Engel's Law.

The amount spent on food by the rich family constitutes only 50 per cent of its income ; that spent by middle class family, 55 per cent ; while that spent by the poor family, 60 per cent. The bars are marked likewise. But this does not mean that the total amount of money spent by the rich family on food is least, and that spent by the poorest family, the biggest. It cannot be, for though the rich family spends only 50 per cent of its income on food, that income is very large ; as such, this amount is larger than the amount spent by the poor family on the same object. This point can be easily understood from the diagram. The total amount spent on various heads is represented by the divisions of rectangles ; and the first division of the rectangles, representing the amount spent on food, is biggest in the case of the rich family. Similar considerations apply to other items of expenditure.

§ 3. THE IMPORTANCE OF FAMILY BUDGETS

The preparation and the study of family budgets is of supreme importance in Economics. Not only in the field of Consumption, but also in the sphere of Production, Exchange and Distribution, their importance is being realised with increasing force. Family budgets have profound importance to householders, economists, statesmen and social reformers alike.

Importance to Householders

The family budgets help a householder to follow the principle of equi-marginal utility. If he has no family budget, he might spend his income unwisely. For instance, he might spend its major part in such recreations and luxuries as cinema-shows, crossword puzzles and other things of like description with the result that adequate amount may not be left for taking care of other important items of expenditure. But if he keeps a family budget, he will at once detect that there is a big amount standing against the item of recreation which can be curtailed with advantage ; and if that sum is spent on other useful objects, he will gain in total utility.

Not only this, it also enables him to distribute his income proportionately between expenditure and saving. He may be spending money so recklessly as to leave

very little for contingencies and old age ; or, he might be saving so much as to lead a life of hardship and misery. If he has a family budget before him, the picture of his present and future requirements will come up before him and he will be in a position to distribute money prudently between expenditure and saving. In these ways and others, family budgets help householders to derive maximum satisfaction out of their income.

Importance to Economists

Family budgets are useful not only to householders but also to economists inasmuch as an important portion of their study is founded on the bed-rock of family budgets.

(1) The study of family budgets gives an idea about the economic position of the people of a country. It gives definite figures of the quantity and quality of commodities consumed by them and shows the stage of their mental progress. Family budgets enable economists to compare the economic positions of different classes of people in the society. They give an accurate idea of the disparity in the financial standing of the poor and the rich and go to make a case for an equitable distribution of wealth and income. Sometimes this comparative study takes into account the economic conditions of the people of two or more than two countries, which bears valuable fruits at times. Comparison of the conditions of the working class in America, England and Japan with that of the working class in India, at the present moment, leads to many important conclusions regarding the connection of income to efficiency, welfare and other sets of economic relationship.

(2) A study of family budgets of a class of persons of a country enables an economist to find out whether the amount is being spent by that class of persons wisely or not. If not, where does the defect lie and how can the people be made to derive greater benefit from the expenditure.

(3) Family budgets also show the taxable capacity of different families. They show how much amount is spent on each head, whether that distribution of expenditure is prudent or reckless, what is the amount of savings, etc. Such knowledge is useful in deciding the magnitude of taxes.

(4) Family budgets provide the raw material for the construction of various index numbers, as for example, the cost of living index numbers. The latter index numbers give a correct idea of the cost of living of, say labourers ; and suggest the minimum wage which must reasonably be given to them. They may, thus, go a long way in settling labour disputes over the wage question and prevent much loss resulting from unnecessary strikes and lock-outs.

(5) Family budgets are also important because certain economic laws are based on their study. The Engel's Law of Consumption, discussed above, is one instance. It is just possible that further study of family budgets may result in the formulation of similar other laws.

Importance to Social Reformers and Statesmen

Social reformers derive much inspiration and lessons from family budgets. To give only one instance, they discover from family budgets the extent of richness in the country, the extent of poverty in it, and the extent of difference in the position of the rich and the poor. The budgets may also give an idea of the causes and nature of the social degradation and misery of the masses and the superficial and plentiful existence of the limited few. They may even make it the basis of a movement in favour of equitable distribution of wealth and income. Similarly, statesmen can make it the object of their activities and bring about a reform in a decisive fashion through taxation and other legislative measures.

§ 4. THE STUDY OF INDIAN FAMILY BUDGETS

So important is the study of family budgets that it has been carried on in various countries of the world with complete thoroughness and with great advantage. In India too study has been done, but only to a limited degree. Important studies have been made from time to time by the Labour Office, Bombay. Under the auspices of the Board of the Punjab, studies of the family budgets of cultivators have been made. In U. P. some studies have been carried on by the Labour Office, Cawnpore and also by some committees like the Labour Committee, etc. Some important investigations have also been done independently. Of all the studies, we shall like to make a mention of those of Major Jack and Professor G. Findlay Shirras.

Major Jack's Study

Major Jack studied the family budgets of the people living in Faridpur district in Bengal. This was the pioneer work and is considered to be contribution to Indian Economics. The line of study followed by Jack was different from that of Engel, but on the whole it confirms Engel's conclusions. For instance, Jack found that the agriculturists living in comfort spend about 58 per cent of their income on food while those who live in poverty spend 60 per cent of their income on this item. The difference between the percentage is not wide because the financial position of the agriculturists living in comfort does not materially differ, according to Major Jack's classification, from the position of those living in poverty.

Findlay Shirras' Study

Findlay Shirras collected the budgets of working class families of Bombay in the year 1921-22. He found that the workers who earned less than Rs. 30 per month spent about 60 per cent of their income on food; while the workers who earned about Rs. 80 to Rs. 90 per month spent about 53 per cent of their income on this item. As such, the percentage of income spent on food decreases as income increases. His study also confirms the truth of the Engel's Law.

These studies are only preliminary. There is a rich, varied and virgin field for other similar studies. It is hoped that in near future, this gulf in the study of Indian economic problems will be bridged over, properly and efficiently.

Studies During and After War

The War gave a great stimulus to the study of family budgets in this country. The most important work has been done by the Labour Department of the Government of India by opening a separate section for collecting family budgets of workers and constructing Cost of Living Index Number on a very large scale. Studies relating to middle-class people have been conducted by the Bombay Gujarati Association, Punjab Board of Economic Enquiry and U. P. Government. In many wartime studies, the need of studying family budgets has been repeatedly realised and efforts have been made in this direction. The lessons learnt during the war are being reinforced by the talk of post-war development of India. We are definite that in the post-war period, a study of family budgets would acquire a new importance and stimulus.

TEST QUESTIONS

1. What do you mean by a family budget? Give a specimen form of a budget.
2. Explain Engel's Law of Consumption. Give a suitable diagram to illustrate your answer.
3. What is the importance of the study of family budgets? Discuss in detail.
4. Do you know of any study of family budgets made in this country? Does it confirm the Engel's Law?

EXAMINATION QUESTIONS

U. P. Board

1. What are family budgets? Why are they constructed? Are there any laws that govern the expenditure of large and small incomes on family budgets? (I. A., 1944)
2. Make a family budget of a shoemaker of Cawnpore having an annual income of Rs. 800. Clearly show how the various items of the budget will be affected if his annual income were to increase to Rs. 8,000 (I. A., 1948)
3. What are family budgets? Draw up an imaginary family budget of a clerk getting Rs. 40 p. m. giving only the main heads of expenditure, and illustrate by means of a diagram. (I. A., 1942)
4. State and explain Engel's Law of family expenditure. How far is it applicable to Indian conditions? (I. A., 1940)
5. What are family budgets? What purposes do they serve (a) to a householder, (b) to the economist, (c) to a social reformer? (I. A., 1928 ; 1938)
6. 'The larger the income the lower the percentage spent on the purchase of articles of necessity.' Justify the statement. (I. C.m., 1945)

Rajputana Board

7. State Engel's Law of Consumption. (Rajputana, 1932; 1948)
8. Demarcate the component parts of a family budget. Would you suggest that an Indian working man's budget follows Engel's law of consumption? (Raj., 1942)
9. What are family budgets? (Rajputana, 1935)
10. What is a family budget? What are the main items included in it? Give any typical budget you may have studied (I. C.m., 1945)

CHAPTER 19

PRACTICAL WORK ON FAMILY BUDGETS

It is a very important, but also difficult task to ascertain the proportions in which the different classes of society distribute their expenditure between necessaries, comforts and luxuries ; between things that provide only present pleasure, and those that build up stores of physical and moral strength ; and lastly between those which gratify the lower wants and those which stimulate and educate the higher wants.—*Marshall*

Enough has been said in the previous chapter on the importance of the study of family budgets. In our country much attention has not so far been paid to such practical studies. It is necessary for us to collect and study family budgets on a large scale and to derive the important information which they are capable of yielding. Important hints are, therefore, given below to aid the practical worker in this field of study.

The Collection of Budgets

India is a country of the illiterate. The masses of the country lack the ability to prepare the family budgets and to realise their importance. Even the educated classes seldom prepare them. As such, the person desiring to gather family budgets in this country has to collect facts and information directly from the individuals concerned regarding their income and expenditure, and to frame the budgets himself. This task involves several difficulties and requires great skill.

§ 1. COLLECTION OF FACTS AND INFORMATION

The collection of the basic material required in the preparation of family budgets being a delicate and responsible task the worker in this field must take requisite precautions if he wants to collect material of high quality.

Instructions for Preparatory Work

Before starting on the actual work of inquiry from the persons concerned regarding their income and expenditure, certain preliminaries have to be gone through.

(1) First of all you should be very clear as to what is the *object of your inquiry*. What it is you want to gather information about—you should be very clear on this point. If you have a clear notion of the object of your inquiry, you will escape the error of collecting irrelevant information which you might have to discard later on ; or the possibility of neglecting some valuable information which could be easily collected.

(2) You should also be clear as to the *unit of investigation*. If you want to collect family budgets of cultivators then your unit of investigation is the cultivator and you must define exactly who a cultivator is. Is a man who carries on only agriculture and no other business a cultivator ? Or a man who carries on agriculture along with some other occupation is also a cultivator ? Difficulties may arise in apparently simple cases. For instance, if you want to collect family budgets of married and unmarried persons, and if you have not defined a married and unmarried person skilfully, you may not know in which class prostitutes should be put. Once you have decided what is the unit of investigation, you should stick to it faithfully throughout the course of your inquiry.

(3) You should also prepare a list of all the questions which you want to put to the informant. You should not forget that your informant is usually an illiterate and uneducated person and can be of help to you only if you can come down to the level of his mental development. Your questions should be as simple as possible, in thought and expression, so that their meaning can be grasped with little or no difficulty. The questions should also be few so that you may not burden the informant. They should not, moreover, be personal and inquisitive lest they might become displeasing. It is advisable to divide the questions in various groups and arrange them in a logical and connected manner.

Instructions for Field Work

This preparatory work being done, you have to go to the informants to collect the necessary information. If you are to collect the budgets of labourers, you will have to go to their quarters. If you want information about cultivators, you will have to go to their villages. Wherever you go, you should be very cautious that by your dress, language or manners, you do not arouse in your informants a sense of suspicion. If you are dressed like a *sahab*, feel shy in speaking the local dialect, and ask a question as if you are some officer, they will not care for you and may not give any information, or may give wrong information. They might suspect that you have been sent by the Government to increase the land revenue, and may, therefore, understate their income and exaggerate their expenditure. Your investigation will be wrong and vitiated as a consequence, and will be useless. Try to imbibe their spirit, their mode of talking and be their friends. Another thing that you should avoid is the display of inquisitiveness. If you are inquisitive and seem to anxious to know about them, they may become nervous or suspicious or angry. Assume a perfectly natural way of putting questions and subdue your inquisitiveness.

The questions should be put slowly and logically. After you have asked one question, give them sufficient time for reply. Generally the answers will be mixed up with plenty of irrelevant conversation, and you must put up with it patiently. But be careful not to give too much time for a reply lest the informant might cook a story out of his imagination. If you feel that the reply is careless or incorrect, you may cross-examine the informant; but the cross-examination should be very cautious. In such a case you may gather the same information from some third parties also, and if you find that the information from independent sources tallies with that given by the direct party, the correctness of your material is definitely confirmed.

After you have made inquiries and have come back from your investigation you should put down the information on paper. Do not try to write out these things before the informant. Whatever notes you make after the investigation, may be logically written and presented in proper form later.

Questionnaire and Blank Form

A questionnaire is a list of questions. Sometimes the persons from whom information is to be gathered are educated and can be expected to send dependable answers to relevant questions. In such a case a *Questionnaire* is prepared and sent to them with the request to send their replies.

When the questions to be asked are simple and little information is required, a list of questions is drawn up, and some space is left after each question where reply to that question is to be written. Such a form is known as a *Blank Form*.

The difference between a questionnaire and a blank form is that the former contains many questions requiring lengthy answers while the latter contains only few questions which can be answered in short; hence a questionnaire does not have the space where answers can be written—they have to be written on a separate paper—while a blank form does have such space.

§ 2. PREPARATION OF FAMILY BUDGETS

After all the information is gathered, you have to prepare a family budget in a standardized and proper form. The actual form of the budget is to be framed in such a fashion that the entire basic material may be systematically arranged and all the important calculations may appear in it. You should clearly show how the percentage expenditure on a particular head has been arrived at.

§ 3. DIAGRAMMATIC REPRESENTATION

The budgets can be diagrammatically represented. The usual diagram for this purpose is a rectangle. The vertical side of the rectangle is made to measure the percentage expenditure, so that the total length of the rectangle is taken to be equal to 100. Then according to the percentage of income spent on various heads, rectangle is divided into various subdivisions, each subdivision representing the expenditure on a particular head. These subdivisions are coloured or shaded or made distinct by different kinds of hatching.

A complex diagram is sometimes drawn when the length of the rectangle is made to measure the percentage of income, while the width measures the actual amount of income. This diagram is usually made use of for comparative purposes. For an illustration, see Chapter 18, p. 141, *ante*.

§ 4. FORM OF A FAMILY BUDGET

A family budget prepared by the student should be in proper form. The actual shape and structure of the budget is not fixed. Different forms will be found given in various books and several others can be thought out. Below is given the form used in the Subsidiary Inquiry (Census 1940-41) into the Family Budget, Composition and Specific Fertility of Middle Class Families.

INCOME AND EXPENDITURE*

A. Income received during the month of 194

Source of income	1st week	2nd week	3rd week	4th week	Rest of the month	Total for the month
1. Salary and Fees	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
2. Business						
3. Gifts or Gratuitous Receipts						
4. Miscellaneous						
Total						

* I am indebted to Bhagwan Sahay Esqr., I.E.S., for this form.

B. *Expenditure incurred during the month of.....194*

Items of expenditure	1st week	2nd week	3rd week	4th week	Rest of the month	Total for the month
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
1. Food						
	(a) Cereals and pulses ...					
	(b) Milk ...					
	(c) Fruits ...					
	(d) Smoke, drink and pan ...					
	(e) All other articles ...					
2. Clothing including head and footwear bedding, etc.	...					
	(a) Rent and maintenance charges ...					
3. House						
	(b) Light, water, fuel and sanitary expenses ..					
	(c) Furniture and household equipment ...					
4. Education	...					
5. Medical	...					
6. Servants	...					
7. Ceremonial and social expenses	...					
8. Recreation and travelling	...					
9. Payment to dependents living outside	...					
10. Payment of debts						
	(a) Interest ...					
	(b) Principal ...					
11. Running expenses over business	...					
12. Investment	...					
13. Miscellaneous	...					
	Total	...				

A more elaborate form is the one used by the Central Bureau of Economic Intelligence, United Provinces, in an inquiry into family budgets of mill workers in the United Provinces sometime back. The tables given below are very thorough and systematic :

I. FOOD		II. FUEL			
Article	Quantity	Cost	Quantity		
	Md.	Rs.	Md.		
Wheat	...		Firewood	...	
Wheat flour	...		Coal	...	
Gram	...		Dung-cakes	...	
Gram flour	...		Total	...	
Birra (Bejhar)	...				
Rice	...				
Barley	...				
Maize	...				
Juar	...				
Bajra	...				
Dal Urd	...				
Dal Arhar	...				
Dal Mung	...				
Dal ()	...				
Ghee	...				
Oil ()	...				
Milk	...				
Sugar	...				
Gur	...				
Meat	...				
Fish	...				
Eggs	...				
Potato	...				
Other vegetables	...				
Salt	...				
Spices	...				
Sweetmeats	...				
Fruits	...				
Tea	...				
Total	...				

III. LIGHT		
	Quantity	Cost
Kerosene oil	...	
..... oil	...	
Matches	...	
Total	...	

IV. HOUSEHOLD		
Rent...	Repairs	Total

V. CLOTHING AND FOOTWEAR

Article	No.	Cost	Life	Cost p. m.
		Rs. a. p.	Months.	Rs. a. p.
(a) MEN				
(1) Dhoti	...			
(2) Pyjama	...			
(3) Shirt	...			
(4) Saluka	...			
(5) Waistcoat	...			
(6) Coat	...			
(7) Underwear	...			
(8) Dhusa (Lohi)	...			
(9) Napkin	...			
(10) Rumal	...			
(11) Socks	...			
(12) Shoes	...			
(13) Chappals	...			
(14) Safa	...			
(15) Cap	...			
(16)			
Total, M.	...			
(b) WOMEN				
(17) Sari	...			
(18) Pyjama	...			
(19) Lahanga	...			
(20) Shirt	...			
(21) Saluka	...			
(22) Urhni	...			
(23) Burka	...			
(24) Chappal	...			
(25) Stockings	...			
(26)			
Total, W.	...			
(c) CHILDREN				
(27) Dhoti	...			
(28) Sari	...			
(29) Lahanga	...			

Article	No.	Cost	Life	Cost p. m.
		Rs. a. p	Months.	Rs. a. p.
(30) Pyjama		
(31) Shirt		
(32) Saluka		
(33) Urhni		
(34) Shoes		
(35) Chappal		
(36) Jap		
(37)		
Total, C.		

IV. HOUSEHOLD REQUISITES

Including receipt from home

(1) Charpai	...	...	
(2) Re-netting	...	...	
(3) Dari	...	...	
(4) Kathri	...	...	
(5) Razai	...	...	
(6) Sheets	...	...	
(7) Blanket	...	...	
(8) Utensils	...	...	
(9) Tinning	...	...	
(10) Umbrella			
(11) Mattresses			
(12) Huqqa			
(13)			
Total			

PRACTICAL WORK ON FAMILY BUDGETS

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VII. MISCELLANEOUS

Item	Cost
(1) Sweeper	Rs. a. p.
(2) Barber	...
(3) Dhobi	...
(4) Soap	...
(5) Hair oil	...
(6) Medicine	...
(7) Education	...
(8) Conveyance	...
(9) Travel	...
(10) Tobacco	...
(11) Pan Supari	...
(12) Intoxicants	...
(13) Recreation	...
(14) Ceremonials	...
(15) Remittances	...
(16) Postage	...
(17) Subscription	...
(18) Newspaper	...
(19) Litigation	...
(20) Interest	...
(21) Debt	...
(22)	Total

VIII. SUMMARY

§ 5. FAMILY BUDGET OF A MILL WORKER*

Below is given a family budget of a mill worker. This budget has been prepared under the supervision of Dr. R. B. Gupta, Labour Officer, U. P. and is based on actual figures.

(1) Industrial Centre.....Ahmedabad.

Name of the head of the family.....Ram Das.

Religion and caste.....Hinduism, Chamar.

Age.....40 Years.

Province and district of origin.....U. P. Jalaun.

Cause of Migration.....Poverty and Indebtedness.

Time of Migration.....C. 1899.

Period of (a) Subsequent employment X. Y. Mills from 1899 to Dec. 1927.

(b) Unemployment—due to sickness from January 1928 to February, 1928. He remained here during the period.

Re-employed in March, 1928 and since then working in the X. Y. Mills.

(1) Size and Composition of family—

	Numbers				Age of—		Relationship to the head of the family.
	Men	Women	Boys	Girls	Boys	Girls	
Wage-earners ...	1	...	...	...	...	...	The head of the family.
Dependents residing with wage-earners.	...	2	1	2	12 years	...	His mother, wife, 2 daughters and 1 son.
Dependents residing elsewhere.	...	...	...	...	...	...

*I express my gratitude to Dr. R. B. Gupta, Labour Officer, Government of the United Provinces, who very kindly spared it for inclusion in this book.

(3) Normal monthly family income.....

Occupation* of each wage-earner			Rate of monthly wages	Rate of wages actually received (Note 3)	Monthly overtime pay	Additional earnings, if any, with source	Total
			Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
Men (1) A weaver in the X. Y. Mills	...	...	25 0 0	22 0 0	...	6 11 4 (Bonus)	23 11 4 Piece wages.
(2)	...	...			
(3)	...	...			
Women (1)	...	...			
(2)	...	...			
(3)	...	...			
Boys (1)	...	...			
(2)	...	...			
(3)	...	...			
Girls (1)	...	...			
(2)	...	...			
(3)	...	...			
Total amount of family income...	25	0	0	22	0	0	6 11 4 28 11 4

*Occupation—The description of the occupation should be as definite as possible. Thus Cotton Mill worker is too general. The particular occupation should be specified, for example, cotton weaver or cotton spinner, or again, not mechanic but fitter, blacksmith, etc., whatever it is.

EXPENDITURE ON FOOD, FUEL, LIGHTING AND RENT

Commodities. (This list may be extended, if necessary)	Total quantity in the month	Total cost in the month	Commodities	Total quantity in the month	Total cost in the month
			Md. s. ch.	Rs. a. p.	Md. s. ch.	Rs. a. p.
Rice	0 9 0	1 0 0	Coal	...	"
Wheat	...		Charcoal	...	
Wheat flour	0 5 0	1 0 0	Firewood	...	1 30 0
Barley	...		Caster Oil	...	0 1 0
Juwari	...		Other fuel and lighting.		0 7 0
Bajra	...		Expenditure on fuel, etc.		1 7 0
Bejharas	3 0 0	8 0 0	Rent per month		3 8 0
Maize	...				
Other cereals	...				
Gram	0 4 8	0 8 0			
Other pulses	...				
Arhar	0 7 0	1 0 0			
Sugar (<i>gur</i>)	...				
Sugar refined	...				
Tea	...				
Sweetmeats	...				
Fish	..				
Meat	...				
Milk	...				
Ghee	...				
Salt	0 2 0	0 3 0			
Spices	...	0 3 0			
Vegetables	...	0 2 0			
Fruits	...				
Mustard Oil	0 0 8	0 5 0			
Coconut Oil	...				
Gingily Oil	...				
Other oils used as food	...	---	---	---	---
Other foodstuffs	...				
Total for food	3 28 0	12 5 0			

EXPENDITURE ON CLOTHING, SHOES AND OTHER NECESSARIES NOT BOUGHT EVERY MONTH

Articles : (List of articles should be extended so as to include all those in use)	No. of articles in use	Cost per article when bought	Total cost of articles	Estimated No. of months that article will last	Estimated cost per month on average
CLOTHING					
<i>For Men :—</i>		Rs. a. p.	Rs. a. p.		Rs. a. p.
Dhoties	1 only	1 4 0	1 4 0	12 Months	0 1 8
Pagri, turbans or caps					
Bandi					
Shirt	1 only	0 8 0	0 8 0	12 "	0 0 8
Coats and waistcoats					
Dhusa or Lohi ...					
Shoes	1 pair	1 4 0	1 4 0	12 "	0 1 8
Angocha	1 only	0 5 0	0 5 0	12 "	0 0 5
					0 4 5
<i>For Women :—</i>					
Lahnga	2 only	1 2 0	2 4 0	12 "	0 3 0
Choli	2 "	0 8 0	1 0 0	12 "	0 1 4
Chadar	1 "	0 10 0	0 10 0	12 "	0 0 10
Dhoties	2 "	1 0 0	2 0 0	12 "	0 2 8
					0 7 10
<i>For Children :—</i>					
Dhoties	2 "	0 10 0	1 4 0	12 "	0 1 8

Articles : (List of articles should be extended so as to include all those in use)	No. of articles in use	Cost per article when bought	Total cost of articles	Estimated No. of months that article will last	Estimated cost per month on average
<i>For Children — (Continued)</i>		Rs. a. p.	Rs. a. p.		Rs. a. p.
Series	...				
Kurtas	2 only	0 6 0	0 12 0	12 months	0 4 0
Cap	...				
Choli	...				
Lanhga or pyjama					
Shoes or sandals					
Angochas	2 "	0 4 0	0 8 0	12 "	0 0 8
Total	..				0 3 4
Total	...				0 15 7
<i>Household Requisites :-</i>					
Charpoy	2	1 4 0	2 8 0	3 yrs. ...	0 1 1
Razai	1	5 0 0	5 0 0	8 " ...	0 0 10
Utensils	6	...	4 0 0	7 " ...	0 0 9
Blankets	1	3 8 0	3 8 0	4 " ...	0 1 2
Umbrella	1	1 2 0	1 2 0	2 " ...	0 0 9
Katharis	2				
Total estimated average monthly expenditure.					0 4 7

MISCELLANEOUS EXPENDITURE

Item	Cost per month	Remarks.
	Rs. a. p.	
Barber	0 4 0	
Dhobi	0 6 0	
Medical fees and medicine	..	
Education	..	
Travelling expenses to and from work	..	
Liquor and bhang	..	
Pan supari	..	
Amusements	..	
Payment to dependent members of family not residing with the family	..	
Interest on debts	4 0 2	
Any other item	..	
Sweeper	0 4 0	
Grinding charges	0 9 0	
Repayment of debt	3 4 0	
Payment to married daughter	1 2 0	He pays Rs. 13/8 per year to his daughter.
Total	10 0 2	

ABSTRACT OF EXPENDITURE

	Rs. a. p.
Food	12 5 0
Clothing and footwear	0 15 7
Rent	3 8 0
Fuel and lighting	1 7 0
Household requisites	0 4 7
Miscellaneous	10 0 2
Total	28 8 4
Balance of income over expenditure	+20 3 0

The student may strike off the percentage expenditure on each item and draw his own diagram.

§ 6. FAMILY BUDGET OF AN ARTISAN (POOR CLASS).*

Name and Address of the Head of the family—Nazar Mohammad of Baburi.

Occupation—Weaver. *Caste and Religion*—Mohammedan. *Number of members in the family*—Men 1; Women 1; Children 4; (Children under 12 to be counted as half adults); *Total*—4; *Period*—one year. *Date of Enquiry*—22nd December, 1940.

Annual Income Rs. 146-0-0.

Items of expenditure	Quantity	Rate	Amount spent	Remarks
1. FOOD				
<i>(a) Grains and Pulses</i>				Rs. a. p.
Wheat	1 md.	10 seers per Re.	4 0 0	
Rice	5 mds.	8 seers per Re.	25 0 0	
Bajra, jwar, maize	5 mds.	12 seers per Re.	16 10 0	
Gram	1 md.	3 Rs. per md.	3 0 0	
Arhar	20 seers	8 seers per Re.	2 8 0	
Urd, Moong or Masur	3 mds.	3 Rs. per md.	9 0 0	
<i>(b) Vegetables and Fruits</i>				
Vegetables	2 as. per month.	For 1 year.	1 8 0	
<i>(c) Sundries</i>				
Ghee	2 seers.	12 chs. per Re.	2 10 0	
Gur	4 mds.	16 seers per Re.	10 0 0	

*Prepared by Mr. Nagai Rao of Harish Chandra College, Benares, I am indebted to its author and to Prof K K. Shah who supplied it to me.

Items of expenditure	Quantity	Rate	Amount spent	Remarks
Salt	12 seers	2 as. per seer	1 8 0	
Spices	8 as. per month	For 1 year	6 0 0	
Tea	...	...	0 2 0	Rarely in winter.
		Total	18 14 0	
II. CLOTHING				
Shirts and kurtas	2	...	2 0 0	Linen prepared at home.
Jackets	2	...	1 0 0	
Dhoties	4	...	4 0 0	
Caps	1	...	1 0 0	
Shoes	2 pairs	...	2 0 0	
Sheets	2	...	1 8 0	
Towels	2	...	0 4 0	
		Total	11 12 0	
III. HOUSING				
Repairs and white-washing	...	Rs. a. p.	1 0 0	His own house.
Total	...		1 0 0	
IV. HEAT AND LIGHT				
Fire-wood	...	12 0 0		
Kerosene oil	...	3 0 0		
Vegetable oil	...	3 0 0		
Total	...	18 0 0		
V. HEALTH AND EDUCATION				
(a) Medicines	...	0 8 0		
(b) Books and stationery	...	4 0 0		
(c) Other expenses	...	2 0 0		
Total	...	6 8 0		

Items of expenditure	Amount spent	Remarks
VI. MISCELLANEOUS		Rs. a. p.
(a) Social and religious expenses and charity	10 0 0	
(b) Legal expenses	0 8 0	
(c) Services and entertainments Barber	1 8 0	
Washerman	3 0 0	
Pan and tobacco	6 0 0	
Travels	1 8 0	
Other expenses	3 0 0	
Total ...	25 8 0	
VII. SAVINGS AND INVESTMENTS Cash	1 6 0	
Total ...	1 6 0	

PERCENTAGE OF TOTAL INCOME SPENT ON CHIEF ITEMS

Heads of expenditure	Amount spent	Percentage of total
	Rs. a. p.	
1. Food ...	81 14 0	56
2. Clothing	11 12 0	8
3. Housing	1 0 0	0.6
4. Heat and light	18 0 0	12
5. Health and education	6 8 0	4.4
6. Miscellaneous	25 8 0	18
7. Savings and investments	1 6 0	1
Total ...	146 0 0	100.0

Note :—Diagrammatic representation (A) of the above is given on page 180.

PRACTICAL WORKS ON FAMILY BUDGETS

§ 7. FAMILY BUDGET OF A MIDDLE CLASS FAMILY*

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Name—Gangadhar Pant, Patni Tola, Benares.

Income—Rs. 110 per month.

Number of Members in the Family—3 men, 2 women and 2 children.
Total 7.

Period—1 month. Date of inquiry—14.2.41.

Items of expenditure	Quantity	Rate	Amount spent	Remarks
I. FOOD				Rs. a. p.
(a) Grain and Pulses				
Wheat	30 seers	8 srs. a rupee	3 12 0	
Rice	20 "	5½ "	3 10 3	
Bajra, Jawar and Maize...	5 "	10 "	0 8 0	
Gram	10 "	10 "	1 0 0	
Arhar	7 "	6 "	1 2 8	
Urd and Mung	3 "	6 "	0 8 0	
(b) Vegetables and Fruits				
Vegetables	35 seers	1 a. per seer	2 3 0	
Fruits	...	...	2 0 0	
(c) Sundries				
Milk	60 seers	6 srs. a rupee	10 0 0	
Ghee	10 "	1½ Re. a seer	15 0 0	
Sugar	9 "	4½ srs. per Re	2 0 0	
Sweets	2 "	½ Re. per seer	1 8 0	
Gur	6 "	12 seer a rupee	0 8 0	
Salt	4 "	1½ anna per sr.	0 5 0	
Spices	1 "	...	0 12 0	
Tea	½ "	e. 1 as. 2 pies 8 per seer.	0 9 4	
		Total	45 6 3	

*Prepared by Mr. S. N. Dikshit of Harish Chandra College, to whom and to Prof. K. K. Shah, Benares,
my thanks are due.

Items of expenditure	Quantity	Amount spent	Remarks
II. CLOTHING			Rs. a. p.
Coats	1	6 0 0	
Shirts and Kurtas	1	1 8 0	
Jackets	1	1 8 0	
Dhotis	2	3 0 0	
Banyans	1	0 8 0	
Caps	1	0 6 0	
Shoes	1	2 8 0	
Socks	1	0 6 0	
Sheets	1	1 4 0	
Towels	2	0 12 0	
Total	...	17 12 0	
III. HOUSING			
Rent	...	6 0 0	
Repairs and white-washing	...	1 0 0	
Total	...	7 0 0	
IV. HEAT AND LIGHT			
Fire-wood		0 8 0	
Kerosene oil		2 0 0	
Vegetable oil		0 4 0	
Electric charges		...	
Other fuels		2 0 0	
Total	...	4 12 0	
V. HEALTH AND EDUCATION			
(a) <i>Health</i> :—			
Doctor's fee	...	1 0 0	
Medicines	...	0 8 0	
(b) <i>Education</i> :—			
Tuition and other fees		6 0 0	
Books and stationery		1 4 0	
Other expenses		4 0 0	
Total	...	12 12 0	

Items of expenditure	Amount spent	Remarks
VI. MISCELLANEOUS		
(a) Social and religious feasts		Rs. a. p.
Births, marriages, deaths, etc. ...	2 0 0	
Religious expenses and charity ...	2 0 0	
(b) Legal Expenses		
(c) Services and Entertainments :—		
Barber ...	0 8 0	
Washerman ...	1 8 0	
Sweeper ...	0 6 0	
Domestic servants ...	6 0 0	
Pan and tobacco ...	1 0 0	
Intoxicants		
Travels ...	1 0 0	
Correspondence ...	0 5 0	
Amusements ...	1 0 0	
Other expenses ...	0 10 0	
Total	16 5 0	
VII. SAVINGS AND INVESTMENTS :—	6 0 0	
Total	6 0 0	

PERCENTAGES OF TOTAL INCOME SPENT ON CHIEF ITEMS

Heads of expenditure	Amount spent	Percentage of total
	Rs. a. p.	
1. Food ...	45 6 3	41
2. Clothing ...	17 12 0	16
3. Housing ...	7 0 0	6
4. Heat and light ...	4 12 0	5
5. Health and education ...	12 12 0	12
6. Miscellaneous ...	16 5 0	15
7. Savings and investments ...	6 0 0	5
Total	110 0 0	100

Note—Diagrammatic Representation of the above is given on page 180 (B).

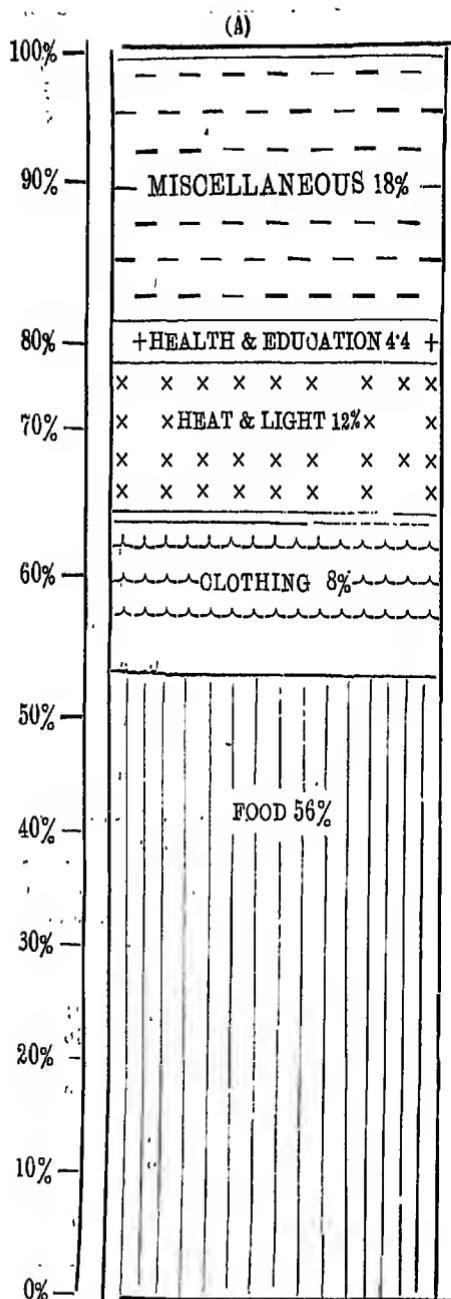


Fig. 19. Diagrammatic representation of the foreigner's budget.

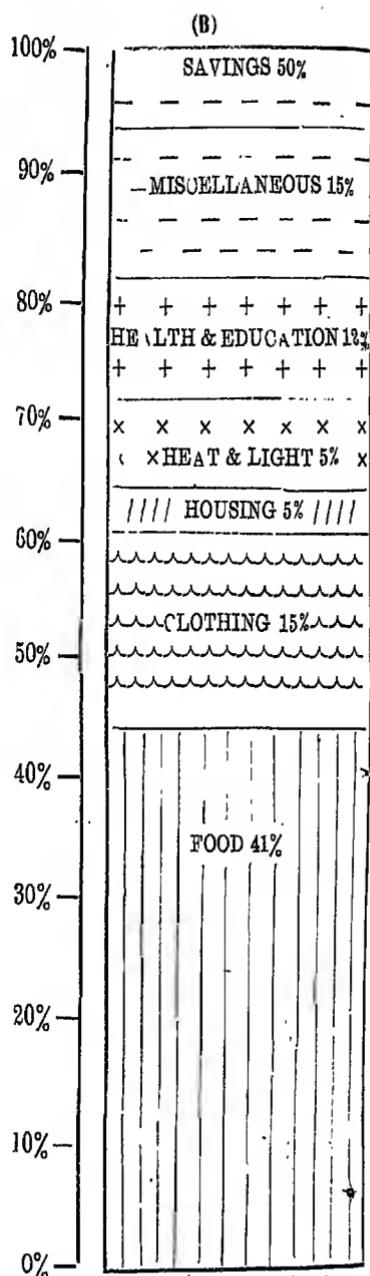


Fig. 20. Diagrammatic representation of the aforesaid budget.

U. P. Board

EXAMINATION QUESTIONS

1. Under what general heads would you classify the expenditure of an artisan? Draw up his family budget and represent it by means of diagram. (I. A., 1939)

2. A cultivator in a village has an annual income of Rs. 60. A clerk in the town gets an equal amount. Please compare and contrast their expenditure under the following heads :
Food and drink, fuel and light, education, health and sanitation, personal services, litigation, religious and social functions, household furniture, recreations ; travel and correspondence, savings. (I. A., 1936)

3. What are family budgets. Prepare the family budget of an Indian artisan for a period of one month. Classify the items under general heads and represent the classification by a diagram (use graph paper). (I. A., 1984)

4. The following are the expenses of a workman :—

	Rs. a. p.		Rs. a. p.
Ata	... 0 2 0 a day	Sweeper	... 0 4 0 a month
Pan	... 0 0 3 a day	Cinema	... 0 6 0 a month
Wood	... 2 0 0 a month	Chapai	... 1 2 0 a year
Oil and ghee	... 2 0 0 a month	Kerosene oil	... 0 2 0 a week
Rice	... 0 0 6 a day	Dhotis	... 2 0 0 a year
A pair of shoes	... 1 8 0 a year	Salt	... 0 2 0 a month
Tobacco	... 0 8 0 a week	Other clothes	... 3 12 0 a year
House rent	... 3 0 0 a month	Country liquor	... 2 0 0 a month
Sweets	... 0 8 0 a month	Religious and social expenses	6 0 0 a year
Vegetable	... 0 0 6 a day	Debt payment	... 2 0 0 a month
Municipal tax	... 1 14 0 six monthly		

Calculate all expenses on a monthly basis and classify the items under general heads and represent your classification by a diagram. (I. A., 1982)

5. Under what general heads would you classify expenditure of a railway clerk getting a monthly salary of Rs. 45? Draw up his family budget and represent by means of a diagram. (I. A., 1981)

6. The following are the daily expenses of a workman unless otherwise stated—

	Rs. a. p.		Rs. a. p.
Ata	... 0 2 3	Wood	... 0 1 0
Pan	... 0 0 3	Oil for cooking	... 0 0 3
Kerosene oil	... 0 10 0 a month	Religious and other expenses	... 10 0 0 a year
Rice	... 0 0 9	A pair of dhotis	... 3 0 0 per six month
Vegetable	... 0 0 3	Salt	... 0 2 0 a month
Sweets	... 0 6 0 do.	One coat	... 2 2 0 a year
One pair of shoes	... 1 8 0 do.	Cinema	... 3 4 0 a month
Tobacco	... 0 0 6	2 Salas	... 4 12 0 a year
Sweeper	... 0 4 0 do.	Renewal of chapai	1 4 0 a year
Municipal house tax	... 0 5 0 do.	Debt payment	... 2 0 0 a month
Country liquor	... 0 0 0 do.		

Calculate all expenses to a monthly basis under general heads and represent your classification by a diagram. (I. A., 1980)

7. Write out imaginary budgets for two families whose incomes are Rs. 20 per month and Rs. 2,000 per month respectively. Explain the difference in the proportion spent under different heads in the two budgets (I. A., 1925)

Rajputana Board

1. What are family budgets? Make out a possible family budget of an Indian artisan for a period of one month. (I. A., 1982)

2. State Engel's Law of Consumption and illustrate it by preparing two budgets, one of a teacher drawing a salary of Rs. 30 per month and the other of a carpenter with an income of Rs. 30 per month. (I. A., 1982)

Other Examining Bodies

1. What is a family budget? Construct one and explain Engel's law. (Nagpur Arts. & Com., 1942)

2. Explain Engel's law of consumption. Draw up a rough family budget of the following persons under these heads :
(i) Food, (ii) Shelter or rent, (iii) Clothing, (iv) Savings, (v) Amusement, Luxuries and other Expenses.

A peon earning Rs. 20 p. m.

A pleader earning Rs. 200 p. m.

A Banker earning Rs. 2,000 p. m. (Nagpur—I. A., 1941)

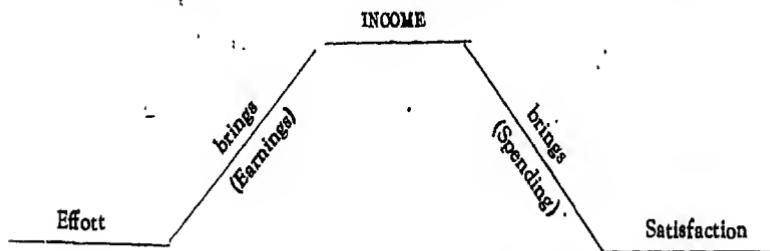
CHAPTER 20

INCOME, SPENDING AND SAVING

When it is matter of spending income everyone wishes to get as much as possible for his money, and is, therefore, anxious that the price of the things he buys should be as low as possible.—Layton

§ 1. INCOME

We had discussed in a previous chapter that in the primitive stage of civilisation human beings used to satisfy their wants directly. If they felt hunger, they plucked some fruits or killed some animals, and ate them up. If they wanted shelter, they made a crude covering or hut. Other wants were similarly satisfied by one's own direct efforts. In course of time this stage of direct satisfaction of wants was superseded by the stage of indirect satisfaction of wants. In the modern society a man makes an economic effort which brings him certain money income. He spends this income on the objects of his desire and thus satisfies his wants. The satisfaction of wants thus comes through income. The following diagram illustrates this process :



You may come across certain persons even today who may be found to satisfy a large number of their wants directly, without the intervention of income. This is more true of people living in villages than of those living in cities. In villages there are persons who grow the corn they consume; stitch the clothes they wear; prepare the house they live under; cook the food they eat; and satisfy other wants through their own direct efforts. But such cases are rare and cover a comparatively small part of the whole field of economic wants. As a general rule, it is the income which plays the central part in the satisfaction of wants. Efforts bring income; which, when spent, brings satisfaction.

Disposal of income

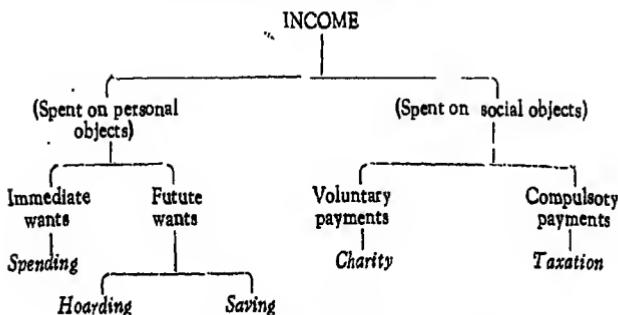
The satisfaction of the present wants is achieved for the most part through income; but the whole of the income is not available for this purpose. The income earned by a person is devoted to two groups of objects, as follows :

(a) *Social Objects* : (i) Compulsory Payment—Tax, and (ii) Voluntary Payment—Charity :

(b) *Personal Objects*. (i) Spending, (ii) Saving, and (iii) Hoarding.

Social Objects. A modern man lives in a society and derives certain conveniences and privileges from communal life. He, in turn, subjects himself to certain liabilities to the society. He has to pay *taxes* to the Central and Provincial Governments and to the Municipal Board, so that the administration of the country, province and cities may be efficiently carried on. The payment of taxation is, of course, compulsory; but there are cases of voluntary expenditure incurred for the benefit of the society. Money given as *charity* to the poor, endowments and donations to educational and other philanthropic institutions are some of the examples.

Personal Objects. However, a substantial and large part of income is spent on personal objects or on the satisfaction of personal wants. The amount devoted to this purpose may be either (i) for the satisfaction of immediate wants, or (ii) for the satisfaction of future wants. The *devotion of income for the satisfaction of the present wants, is known as spending.* The amount set aside for the satisfaction of future wants is known as (i) *hoarding*, if the amount is not utilised in some productive manner, as for example, if it is closed in an iron safe and kept there for future use; or (ii) *saving*, if this amount is used productively, e. g., if it is deposited in a bank on some interest. The following chart illustrates this classification of income.



Economics of charity shall not be discussed in this book; it is a question of advanced economic study. The study of taxation is postponed to Part VI of this book where a detailed discussion of the subject will be given. In this chapter we shall throw some light on economics of spending, hoarding and saving only.

§ 2. ECONOMICS OF SPENDING

Places of Shopping

Spending, in a modern society, involves shops and shopping. Income is usually spent on various commodities which may be purchased from different sources. In modern times means of transport have so much developed, commerce has become so widespread, and general economic progress has reached such an advanced stage, that we now have unprecedented facilities for the expenditure of money. Today we find shops, big and small, the multiple shops and the universal stores, the one-price shops and the touring trains, the exhibitions and the order-suppliers; whereas our ancestors had no other facilities than the hawkers, fairs and periodical markets.

Hawkers. In the olden days towns were few and far between. Majority of the population lived, as it still lives in this country, in villages. Villages being small and transport connections with towns being inadequate or even non-existent they were,

more or less, completely segregated units. The usual link between the village and the outside world was the hawker or the itinerant vendor who used to go from village to village, bringing his little shop to the very door of his consumers. Along with the wares which he sold, he brought all news of the great world outside, together with a good deal more of local gossip which he would have picked up as he went from door to door. His stock consisted of goods which the somewhat limited industry of the household, farm, or village was unable to provide. He was usually loquacious and persuasive, and his quick wit and invariably good humour helped him to dispose of his wares with great profit to himself.¹ He is still an important visitor to the Indian villages and is to be seen in all the big cities of this country.

Fairs or Melas. The hawkers, however, could not possibly be expected to satisfy all the wants of villagers. The need of some other arrangement of shopping was felt; and it was satisfied for long time by fairs or *melas*. These fairs or *melas* were periodically held. Nor infrequently, they were connected with some religious festival or celebration. Magh Mela of Allahabad and Kumbh Mela of several places are the living examples of such fairs. Other fairs took purely commercial form. The cattle fair of Bateshwar in the United Provinces and Sonepur in Bihar are good instances.

Periodical Markets or Painths. The marketing facilities were also provided by temporary markets or *painths*, a form of marketing still in existence in India.

The local *painth* of each village is held once or twice a week and on fixed days. Generally a group of villages join together and fix their respective days of *painth* in such a fashion that a merchant may pass from one village to another in a round, setting up his shop everyday in a particular village and upsetting it in the evening, to open it again the next morning in the next village. The *painth* is, as it has ever been, a very busy day for the village, and is usually attended by merchants of the neighbouring places.

Shops. Hawkers, fairs and markets are today important mostly in rural areas; they are not important in cities. All the modern cities and towns have permanent markets where shops are opened on a permanent basis. Indeed, shops have begun to penetrate even into the villages. The shop-keeper displays and stocks the articles sold by him. The shop may be of a simple type containing few goods and fewer varieties of each good; or, it may be a very large shop stocking many varieties of countless commodities. A big shop is sometimes divided into a large number of departments, such that you can purchase everything you like, from alpin to aeroplane, from one department or the other. Such shops are called Departmental Stores. There are, on the other hand, some shops in which all the articles are sold only for one fixed price. Such shops are called "one-price shops."

Exhibitions. Exhibitions provide another opportunity for the spending of income. The scope of an exhibition is determined by the area from which it draws sellers. For instance, if sellers belong to one district only, it is called district exhibition. If the sellers of a province as a whole are represented in the exhibition, it is known as provincial exhibition. If, on the other hand, businessmen from all parts of the country congregate in it, it is called a national or all-India exhibition. Sometimes even international exhibitions are organised in the important trade centres of the world where all the countries of the world are represented.

Exhibitions have several advantages. They are an important means of the advertisement of the goods produced by merchants. Visitors to the exhibition easily come to know the goods available for sale and the firms they can be had of. Moreover, exhibitions are the meeting grounds of several producers of the same

¹Penson, *Op. Cit.*, Vol. II, pp. 56-57.

articles who by comparison find out the defects and shortcomings in their own wares. By this healthy competition, the standard of craftsmanship is raised. Again, exhibitions provide the place where goods of even distant merchants, which may not be otherwise available in the town, can be purchased.

Generally it is seen that villagers cannot afford to come to exhibitions; or that exhibitions are not organized at the time when a manufacturer wants to advertise his goods. To meet such cases, exhibition trains and exhibition lorries are run.

Principles of Spending or Shopping

From the sources of purchasing goods, we now pass on to the principles which should be followed in making purchases. This discussion may seem useless to those who think that the spending of money is a very easy job; our wants are so numerous that one may spend thousands and lacs of rupees within a short period. But the wise expenditure of money is a very difficult task, requiring as it does enormous skill and experience. The test of efficiency in spending money is the derivation of the maximum possible satisfaction out of the amount spent. This depends upon two sets of factors: (i) the method of spending; and (ii) the prices of commodities purchased or general price level.

(i) *Method of Spending.* The method in which money is spent is an important factor determining the amount of satisfaction obtained therefrom. Some people have the qualities which make the money go a long way; while others do not know how to spend money properly. The qualities which lead to success in spending are the following:

(a) *Exact Knowledge of One's Requirements.* If a man wants to derive maximum satisfaction, he should know exactly what he requires and should purchase only the required articles. He should buy just those articles which he wants, and should not go in for an article simply because it is so attractive or because it is being sold at a cheap price.

(b) *Ability to Compare the Urgency of Various Wants.* A man should also be able to compare the intensity of various wants, to arrange them in order of their intensity, and to spend money on them in that order. If so, he will be in a position to satisfy his most pressing wants first and less pressing wants afterwards; he will be able to follow the law of equi-marginal utility and derive the maximum benefit out of his expenditure.

(c) *Ability to Judge the Quality of Goods.* If a person is a good judge of the quality of things that are being offered for sale, he will easily pick up the things of right quality. He cannot be misled to purchase a bad but attractive article in place of a good but less attractive one for the same price. Cheapness or general attractiveness of certain articles will not delude him, and he will be guided by their intrinsic qualities in his purchases.

(d) *Knowledge of Places Where Best Things are Sold.* In order to be able to get maximum benefit out of one's expenditure, one should know the places where a particular thing is sold at the cheapest price. He should not stick to a neighbouring shop simply because it is near and easily approachable; but should always purchase things from the shops where articles are cheap in proportion to their respective prices.

(e) *Bargaining Tact.* He should also be good at bargaining and higgling. In the advanced countries of today higgling is disappearing or declining; but has not become obscure, and is liable to persist in wholesale and other trades. In our country, in particular, higgling holds an important sway, and one who does not know how to bargain is generally a loser in his purchases. It is a common experience that whereas an *ekkawalla* may begin by demanding 8 annas, he may end by accepting 3 annas; a

fruitseller may demand Re. 1.80 a seer for grapes, but he may accept only 12 annas a seer. In such cases the possession of bargaining tact is a great asset.

(ii) *Prices of Commodities Purchased, or General Price Level.* Besides the personal qualities discussed above, the prices of goods and services which are purchased also determine the amount of satisfaction derived from expenditure. If prices of commodities in general rise, then, other things remaining the same, the buyer will be able to purchase fewer articles than before and will obtain less than the anticipated satisfaction. Similarly, if prices in general fall, he will obtain more than the anticipated satisfaction. The average price of the commodities habitually purchased by a person is called the general price level. It is this general price level and the personal qualities of the buyer which determine how successfully he is able to spend his money.

§ 3. ECONOMICS OF SAVING AND HOARDING

According to the analysis of income presented in § 1, saving is that part of income which is set aside in some productive form for meeting future wants. Saving is to be differentiated from hoarding which can be defined as the putting aside of income in an unproductive manner for the satisfaction of future wants. If a man puts a sum of Rs. 5,000 in an iron safe to be used in future, he does not use the money productively; therefore, it shall be called hoarding. But if he deposits this sum in a bank at interest, he uses it productively and this will be called saving.²

Saving versus Hoarding

The money hoarded is a dead loss to the owner and to the country at large. You may be aware of certain misers who are very averse to spending; nor do they like to entrust their money to the bank lest the bank may fail or their actual wealth may be known to other people, particularly the income-tax officers! They lock-up their money in an iron safe or bury it underground and are happy to possess it. This sort of hoarding does not yield any material welfare to the hoarder; the money hoarded is as good as not possessed. Such money is of no use to the country at large which almost loses it since it cannot be devoted to any productive purpose. Hoarding is, therefore, to be discouraged.

Saving, on the other hand, is beneficial to the saver and the country alike. The person who puts some money, say, in a bank for a "rainy day" earns interest during the period he does not require it. The money deposited in the bank is lent out to industrialists, traders and agriculturists and goes to increase the wealth produced in the country³.

§ 4. SPENDING AND SAVING

Relation between Spending and Saving

The relation between spending and saving has been lucidly explained by T. S. Penson in the following words: "Spending and saving have one thing in common. In both cases wealth is given in exchange for certain goods and services, but the difference is that the goods and services are not put to the same use. In the case of spending, the goods and services are applied directly to the satisfaction of wants; in the case of saving, the goods and services are applied to the production of other wealth,

²The motives leading to saving have been discussed in Book III of this Volume.

³Saving, it will thus be appreciated, is synonymous with 'capital'. Saving means conversion of 'wealth' into 'capital'.

and so they bring satisfaction of wants indirectly instead of directly. For example, if a man who was about to spend £100 on additional furniture changed his mind and bought instead new inventions or appliances which would enable him to get more work done in a given time, he would have substituted saving for spending; in each case a purchase would have been made, but the use to which the thing purchased was put was wealth production instead of wealth consumption.

"It would appear then that spending and saving are both essential features of our everyday economic life. Wealth is only produced because there is the desire to consume it, but since capital, the result of saving, is one of the necessary factors of wealth production, wealth must not only be produced for present consumption, it must be produced also for consumption at a future date."⁴

Spending vs. Saving

It is sometimes argued as to whether saving is more important than spending or spending is more important than saving. Arguments are given on both the sides by the advocates or the opposing camps to their own satisfaction. We shall point out what these arguments are and what are their defects.

Those who think that saving is more important than spending argue that saving leads to the accumulation of capital, so that if we have plenty of Capital we can increase production to enormous extent. This will give rise to an era of prosperity; trade will be brisk; labourers will find better and wider employment than before; businessmen will earn decent profits; material prosperity will be visible on all sides.

This argument of the saving group is only partly correct. Prosperity is not the result of production alone. Goods produced must be sold. The sale of the goods produced is the real crux of the entire business problem. One might increase production to any extent, but if he cannot dispose of the goods produced, that production will be of no account. It will, on the other hand, lead to a "glut" in the market, sagging prices, trade depression, shrinking production, decreased employment and low wages. But the goods produced can be sold only if people spend money. The conclusion, therefore, is that prosperity, which, it is supposed, can be brought about by an increase in saving, requires for its support increased expenditure. As such the idea that saving is more important than spending is not accurate.

The argument of the advocates of spending group is similarly fallacious. They argue that if people spend money freely and on a large scale, goods will be sold in plenty; trade activity will be increased; production will get a stimulus; employment will go up; wages will also look up; and an era of prosperity will set in.

This argument can be easily criticised. It envisages the circle of prosperity as a result of increased expenditure. Increased expenditure, it is said, leads to increased production. But increased production cannot become an accomplished fact unless saving on a large scale has been done, so that sufficient capital is available for large scale production. As observed above, saving is as much necessary for economic prosperity as spending.

It is, therefore, abundantly clear that for the economic welfare of a country, saving and spending are both important. Just as both the legs of a man are necessary for walking, similarly both saving and spending are necessary and essential for the proper functioning of the national economy. Nobody can say which of the two legs is more important, for both are necessary for walking; similarly it cannot be stated,

⁴Pearson, *The Economics of Everyday Life*, Vol. 1, pp. 51-52.

with any show of reason, whether saving or spending is more important in the interest of the economy, because no economy can be prosperous without either.

Another Form of Controversy

The controversy, as stated above is evidently misplaced; no party to the controversy is absolutely correct. The controversy can be presented in a slightly different form, when it becomes quite sensible as well as important. We may very well ask: Should a country spend more or save more at any particular moment? This will depend upon the requirements of the moment. If at that moment, the country in question has enormous capital accumulations so that the entire output is not likely to be sold off, it is essential that emphasis be laid on spending. For instance, during the recent trade depression of 1929-32, there was a glut in the market and spending was of better help to the economy than saving. If, on the other hand, there has been disproportionate spending of money, at a particular moment, so that the capital resources are exhausted, obviously saving is more important than spending. For instance, after the last Great War it was found that countries had been spending money very recklessly during the war without any regard to their capital accumulations, with the result that after the war much capital was required. At a time like this, saving is more important than spending.

How is Saving Made in Practice?

We have discussed the problem of spending *vs.* saving in theoretical aspect. Let us now examine how does a man decide what amount of his income he should spend, and what amount he should save. If we look around us and try to study the psychology of those who save something, we would get an answer to our question.

Broadly speaking, persons can be divided into two classes, *viz.*,

(i) Those who save a certain percentage of their income, and decide to spend only the balance. There are some persons who deposit say 25% of their salary or income in a bank, and spend only 75%. These are the persons who have control on their expenses, who have coolly and carefully mapped out their requirements, and who are systematic in their general outlook. But it does not necessarily follow that their expenditure is wise. Their expenditure, in relation to saving, will be wise if in 75% of their income, they live well and without difficulty.

(ii) Those who spend money freely and whatever remains with them at the end of the month is kept by them as saving. Such persons attach greater importance to the present than to the future, and are generally careless in their plan of expenditure. Though it is possible even here to exercise some control on expenditure, but this control is bound to be very weak. Here also we cannot say that the expenditure is wise; on the other hand, since it is planless it may be very unwise.

None of these methods is, however, ideal. The first method is too rough and unscientific. There is no sanctity about any particular percentage and it would be foolish to say that if one saves a certain percentage of one's income, it will be a very wise thing. The second method is too careless and does not attach proper importance to saving. What one should actually do is to very carefully find out his items of expenditure and try to so arrange them that he lives decently and according to his status. He should try to envisage his want of money in future; and he should determine his savings accordingly. Thus his present expenditure should be determined according to his needs and status, his savings according to his future needs; and in this manner a proper proportion should be maintained between spending and saving.

TEST QUESTIONS

1. Show the part which income plays in the economic activities of a modern man.
2. Analyse income into its component parts and give a short description of each of them.
3. Write an essay on 'Shops and Shopping'.
4. What are the possible sources from where purchases can be made? What are the principles of spending money?
5. Distinguish between saving and hoarding and give their respective advantages and disadvantages.
6. "Spending is more important than saving to the material welfare." Comment.

EXAMINATION QUESTIONS

1. Discuss with examples the relation between saving and spending. (U. P., 1943)
2. What is the object of saving? How does a man decide what amount of his income he should spend, and what amount he should save? (U. P., 1943)
3. What is the relation of saving to spending. (U. P., 1934)
4. Discuss, (a) The best way to benefit a community is to spend one's income, (b) From the social point of view saving is always better than spending. (Calcutta, 1934)

CHAPTER 21

SOCIAL ASPECT OF SPENDING

The law interferes hardly at all with a man's method of spending his money so far as it affects only himself, but it does to a certain limited extent control his expenditure in cases where it is likely to be in actual conflict with the general interest.—*Penson*

§ 1. EFFECTS OF INDIVIDUAL SPENDING ON SOCIETY

In the foregoing chapter we surveyed the effects of individual spending on the particular individual concerned. It would be readily appreciated that since an individual lives in a society and his actions affect its well-being, his method and nature of spending have telling effects on the welfare of the society he belongs to. He may benefit or harm the society through his spending. By spending money on healthy and salutary objects he may contribute to his productive efficiency, add to the richness of the society as a whole, and form an ideal for others to follow. Or, he may indulge in harmful consumption of intoxicating drugs and liquors and things of that nature, make himself inefficient, prejudice the richness of the society, and set a bad example for others.

The effects of an individual expenditure on society can be studied under two heads : (i) effects on production ; and (ii) effects on consumption.

Effects on Production

An individual's method of spending has considerable bearing on production, for closely follows the demand : whatever is demanded is produced. Thus production may be good or bad, may be more or less. More specifically, the following are the effects of individual expenditure on production :

(a) The method of individual expenditure may divert productive resources (labour, capital, etc.) from one channel of production to another. Productive resources are devoted to the production of those goods that are demanded and taken away from the production of those goods the demand for which slackens. This diversion of resources may be good or bad from the point of view of material prosperity. If, at any particular moment, housing scheme for labourers is the most pressing necessity, but some rich fellows demand beautiful and costly clothes, productive resources will be diverted to the production of the latter : such diversion will be socially injurious. This sort of misdirection of productive resources can be checked by the State interference.

(b) The nature of individual expenditure may lead to the employment of labourers in healthy and useful avocations or in dangerous and injurious lines like the production of explosives and arms, etc. The former are beneficial to labourers ; but the latter take a heavy toll of human life, while many of them develop many abnormal and injurious tendencies, for crimes and such other nefarious acts.

(c) A consumer may, through the nature of his expenditure, increase or decrease his efficiency which will be reflected in his productivity. He may thus make the society rich or poor. He may exert similar influences on others with similar results.

Effects on Consumption

The nature of the expenditure of an individual affects the nature of expenditure

of other members of society as well. The instinct to follow others is strong in human heart. The social ties strengthen this tendency. If a person takes to drinking, he may persuade others to indulge in the same vice, and the habit may spread. Again, if his resources are considerable, he may monopolise the nutritive articles for himself and for his class, thus leaving only poor varieties for the consumption of the poor. This is more possible when it is initiated by a group of persons than by an individual alone.

§ 2. STATE INTERVENTION IN SPENDING

It is sufficiently obvious from the above discussion that individual spending has a tendency of affecting the society either beneficially or injuriously. To do away with the harmful effects on society which individual spending is capable of, governments generally interfere and control the injurious spending.

Opinions differ on the point whether the State is justified to interfere or not. This is indeed an age-long problem in Economics and politics, on which there has ever been a difference of opinion. Some persons hold that the function of the State is only to look after the national defence of the country and the maintenance of peace and order. It has no right to interfere in matters so personal as spending. There are, on the other hand, other thinkers who vest the State with all possible powers. According to them, State has a right to interfere wherever it likes. The correct attitude is that which steers midway, between these two extreme views; the State should interfere only if the interest of the society is in the danger of injury. This is the opinion which today finds the greatest support and appears to the most reasonable view.

Some Old Methods of Interference

State interference in spending is not a thing of recent origin. There were several methods of control in force in ancient times as well. The most famous of these were the *Sumptuary Laws* which forbade the consumption of certain articles and insisted on the consumption of others. In the 19th century in Spain, for instance, people were spending money recklessly on silks, velvets, etc., when it was legislated that these things can neither be manufactured, nor sold, nor used. Similarly in England during the 17th century when it was thought desirable to give encouragement to the silk industry, the use of silk for covering buttons and for making button-holes was made compulsory.

State Interference in India

In our country, the State has interfered in spending in some cases. During the regime of the Congress Government, the policy of prohibition was launched upon according to which the consumption of liquor was to be prohibited. This was due to the obvious ill-effects of this consumption on the efficiency of the people. Again, Governments in various provinces have tried to check the adulteration of various foodstuffs, ghee, milk, etc., in several ways.

Wartime Interference: Rationing and Price Control

While the case for interference in individual spending is strong in peace time, it becomes stronger still in such an abnormal time as a war. At such a time, the needs of the war theatres come first and civilian consumption has to be restricted with a view to enable producers to supply war needs. A fixed quota of certain essential commodities is allotted to each individual during a given time and this is the most that he can purchase. This is known as RATIONING. Rationing has been introduced

in India in several provinces and its utility and necessity is largely realised. Rationing serves another useful purpose as well. It involves the sale of commodities at a fixed price and thus helps to keep down prices. Rationing and price control go hand in hand. Governments in this country have been intervening in consumption both in the matter of quantity and price : and such interference has been found generally useful.

TEST QUESTIONS

1. Does the expenditure of an individual affect the welfare of the society ? If so, how ?
2. Should the State interfere in individual spending ? What is your opinion on the point ?
3. Give some illustrations of State interference in spending in India and abroad.
4. Write short notes on : Sumptuary Laws, Price Control and Rationing.

EXAMINATION QUESTIONS

U. P. Board

1. Is it of any consequence to society how a person spends his income ? Should society interfere with individual liberty in spending. (I. A., 1928, 1940)
2. What is the relation of saving to spending ? Is it of any consequence to society, how an individual spends his income ? Should society interfere with a man's liberty in spending money ? (I. A., 1934, 1937)
3. Discuss the various methods whereby a rich man can affect other members of the society by the manner in which he makes the use of the money. (I. A., 1936)
4. What is saving ? 'Saving is a personal and social duty.' Explain the truth of this statement. (I. Com., 1944)

Rajputana Board

1. "From the social point of view saving is always better than spending." Do you agree with this view ? Fully explain your answer. (I. A., 1944)

CHAPTER 22

LUXURIES AND WASTE

The consumption of luxuries should be indulged in only after all are provided with necessities. This is a moral principle that commends itself to all civilised communities and finds indirect expression in positive law.—Seager.

We shall now take up certain special problems of individual expenditure, and their social repercussions. We shall also consider what should be the attitude of the State on such matters. These problems relate themselves to luxuries and waste.

§ 1. THE PROBLEM OF LUXURIES

Luxuries are generally consumed by the rich and supposedly they derive the benefit at least worth the price they pay for them. But if we look at luxuries from the point of view of society, we will find that their consumption cannot be definitely and categorically approved or disapproved. The consumption of luxuries has been defended from social point of view; while it has also been subjected to serious criticism from the same angle of vision.

Social Benefits of Luxuries

Society derives the following benefits from the consumption of luxuries.

1. Luxuries are necessary for human progress. A luxury has been defined by Professor Gide as the satisfaction of a superfluous want; and as the word "superfluous" is associated with some accusations, luxuries are usually looked down upon. But a thing does not become condemnable simply because it is superfluous. As Voltaire once remarked, even superfluous is sometimes necessary—a remark which applies with much force. Everybody, of us must have some luxuries to consume; otherwise he will be reduced to the position of a beast of burden, with no variety, pleasure and richness in life. Every want was, in fact, considered a luxury at the time of its origin and had it then been suppressed for being superfluous, society would have today been in the stage of barbarism.

2. Generally luxurious articles are very artistic and require skill and refinement. The consumption of luxuries, therefore, raises the standard of artistic excellence.

3. The desire to get luxuries, at present unattainable, fires ambition or leads to putting forth of greater power of mind and body. When a man sees some persons enjoying luxuries in plenty, he feels a prompting to do the same. This feeling inspires him to work hard and more efficiently so that he may be able to increase his income and enjoy the luxuries he pines for. An ordinary labourer inspired by these motives may in course of time become a boss, then the inventor of machinery, and eventually the owner of a factory.

4. The consumption of luxuries raises the standard of living. A rise in the standard of living discourages procreation and thus checks over-population. Before the newly married couple, the question which frequently arises is: "A car or a baby"; and the former often wins! It is interesting to observe that the rich have fewer children than the poor.

5. Luxuries, like precious ornaments and stones, constitute a form of insurance in the days of financial difficulties. This is the reason why women of our country attach so much importance to their gold and silver ornaments; for after the death of their husband or in difficult days during his life, they may be of use to the family.

6. It is sometimes mentioned that the consumption of luxuries creates employment. Suppose, a rich man makes a grand show of fireworks and invites his friends and relations to witness it. Employment will, then, be given to fireworks-makers, to drivers of conveyances in which his friends and relatives will come, and so on. But this point, as we shall presently see, is not quite correct.

7. Luxuries, it is sometimes mentioned, leads to the transference of wealth from the rich to the poor. Generally luxuries are consumed by the rich who give money to the poor who supply them the articles of luxury. This point again is not quite correct as will be shown below.

Social Disadvantages of Luxuries

1. A strong argument against luxuries is that their consumption is generally confined to the richer sections of the community. Thus a few rich men are able to enjoy joy flights and joy-rides, to pass their days in what Bernard Shaw styles as "resourceless loafing and consumption of chocolates, cream, cigarettes, cocktails, novels and illustrated papers". The poor people never get a chance to enjoy them. Luxuries thus go to make a difference between the rich and the poor look very wide, a factor which has led to revolutions in various countries of the world. In our country in the older days luxuries were few and far between and the distinction between the poor and the rich was very imperceptible. Social life had a smooth running. But now with the increase in the facility, number and popularity of luxuries, the gulf between the rich and the poor has become very wide and these two sections are now represented as foes rather than friends.

2. Sometimes the poor are also able to enjoy some luxuries; but this is not free from mischief. The poor have very slender resources and the use of luxuries often takes place at the cost of necessities and comforts. Sometimes luxuries are very injurious to the poor and deteriorate their efficiency. Liquor is a luxury of this character.

3. Some people believe that it is wrong to say that luxuries raise the standard of art of the community. Articles are now produced through mechanical appliances in the factories where skill is not much needed. It is only in those few businesses where hand work still persists that the luxuries may be said to encourage art.

4. The statement that luxuries create employment is not correct. If money is spent, not on luxuries, but on some other more useful commodities necessary for efficiency and healthy living, there will be no less employment and briskness of trade.

5. The argument that luxuries lead to the transfer of wealth from the rich to the poor is also a shady one. The amount of money, that a rich man gives to the poor for the supply of luxurious articles, is not kept by the latter entirely for himself. The preparation of the article requires costly raw materials and sometimes costly tools as well. The labourer has to pay for them and a large portion of what he receives, thus passes out of his hands generally into the hands of the rich persons who deal in such costly things. Thus, in essence, some rich persons pay money to other rich persons through the medium of labourers. The transfer of wealth from the rich to the poor does not actually take place.

§ 2. WASTE

When we spend money on certain objects, we expect to receive some return. This return may be more than, or less than, or equal to, the amount paid for the commodity purchased. When the expenditure on a particular object gives less utility than the amount spent, it is called 'waste.' *Waste may, therefore, be defined as the spending of money without deriving a corresponding benefit or return of satisfaction.*

Examples of waste can be easily imagined. When fruits "go bad," when one leaves food uneaten in a dish, when a work is left incomplete, in all these cases waste takes place.

An expenditure is called waste either from the point of view of the individual, or from the point of view of the society, or from both the standpoints. All the examples given in the previous paragraph are the examples of waste from both, the individual as well as the social standpoints. A feast given by a rich man may not be a waste from his point of view—he may feel that he has derived as much benefit as the cost of the entertainment; but little importance may be attached to such fleeting enjoyment from the social angle of vision and it may be considered as a social waste.

§ 3. DESTRUCTION OF PROPERTY AND EMPLOYMENT

Destruction of wealth, accidentally or deliberately, brings with it no satisfaction and is, therefore, waste. It is asserted by some that destruction of wealth creates employment since the wealth that has been destroyed has to be replaced. This argument is, however, fallacious and is known as "Make-work Fallacy". It is certainly true that if a glass pane is broken, or a book is torn away, or a house is reduced to ashes, each of these things will have to be replaced, and employment will thus be created for their producers; but had they not been destroyed, the money devoted to their replacement would have been spent on some other useful objects. The person whose glass pane was broken might then have purchased some sweets for his family; the student whose book was torn to pieces could then have purchased a fountain-pen; the house owner whose building has burnt down, could then have purchased a machinery. Employment thus would have been created even in the absence of any destruction of property. The creation of employment is based on expenditure and whether the expenditure is for the replacement of the destroyed property, or for the purchase of new articles, is immaterial so far as the total volume of employment goes. It is, of course, in the interest of the nation that its wealth may not be destroyed and it may not be made poorer in this fashion.

APPENDIX TO CHAPTER 22

The broken pane

Frederick Bastiat, a French economist of great repute, has given the story of the *Broken Pane* in one of his capital essays, known as *Sophisms of Economics*, which is reproduced below:

Have you ever had occasion to witness the fury of the honest burgess, Jacques Bonhomme, when his scampish son has broken a pane of glass? If you have, you cannot fail to have observed that all the bystanders, there were thirty of them, lay their heads together to offer the unfortunate proprietor this never failing consolation, that there is good in every misfortune, and that such accidents give a fillip to trade. Everybody must live. If no windows were broken, what would become of glaziers? Now, this formula of condolence contains a theory which it is proper to lay hold of in this very simple case, because it is exactly the same theory which unfortunately governs the greater part of our economic institutions.

Assuming that it becomes necessary to expend six francs in repairing the damage, if you mean to say that the accident brings in six francs to the glazier, and to that extent encourages his trade, I grant it fairly and frankly and admit that you reason justly.

The glazier arrives, does his work, pockets his money, rubs his hands, and blesses the scapegoat son.
That is what we see.

But if, by way of deduction, you come to conclude as is too often done, that it is a good thing to break windows—that it makes money circulate—and that encouragement to trade in general is the result, I am obliged to cry, haft ! Your theory stops at what we see, and takes no account of *what we don't see*.

We *don't see* that since our burgess has been obliged to spend his six francs on the thing, he can no longer spend them on another.

We *don't see* that if he had not this pane to replace, he would have replaced, for example, his shoes, which are down at the heels; or have placed a new book on his shelf. In short, he would have employed his six francs in a way in which he cannot now employ them. Let us see, then, how the account stands with trade in general. The pane being broken, the glazier's trade is benefited to the extent of six francs. *That is what we see.*

If the pane had not been broken, the shoemakers or some other trade would have been encouraged to the extent of six francs. *That is what we don't see.* And if we take into account what we *don't see*, which is a negative fact, as well as what we *do see*, which is a positive fact, we shall discover that trade in general, or the aggregate of national industry, has no interest, one way or other, whether windows are broken or not.

Let us see, again, how the account stands with Jacques Bonhomme. On the last hypothesis, that of the pane being broken, he spends six francs, and gets neither more nor less than he had before, namely, the use and enjoyment of a pane of glass. On the other hypothesis, namely, that the accident had not happened, he would have expended six francs on shoes, and would have had the enjoyment both of the shoes and of the pane of glass.

Now as the good burgess, Jacques Bonhomme, constitutes a fraction of society at large, we are forced to conclude that society, taken in the aggregate, and after all accounts of labour and enjoyment have been squared, has lost the value of the pane which has been broken.

TEST QUESTIONS

1. Describe the advantages and disadvantages of luxuries. Do you approve of the consumption of luxuries?
2. What do you mean by waste?
3. "Destruction creates employment; therefore, property may be deliberately destroyed." Comment.

EXAMINATION QUESTIONS

1. What are luxuries? Some people are not at all in favour of luxuries. Are they right? Discuss the advantages and disadvantages of luxuries in society. (U.P., Arts, 1948)
2. Explain with examples the difference between waste and consumption. Do both affect production in the same way? (U.P., Com., 1944)
3. Discuss the view that free expenditure on the part of richer classes tends to increase employment by making money circulate. (Delhi, 1929)
4. What are luxuries? Is there any social and economic justification for them? (Delhi, 1929)

PRODUCTION

A State, according to Plato, is formed because the individual is not able to supply all his wants by himself, but only when he makes common cause with other men, and devotes himself to one single industry for the common good, on the understanding that the rest are doing the same. Thus arise the separate trades of farming, building, weaving and shoemaking, and this division of labour is best.

--James Bonar

[CHAPTERS: 23. Meaning of Production 24. Factors of Production 25. Productive Efficiency 26. The Laws of Returns 27. Gifts of Nature or Land 28. Nature's Gifts to India: Physical Environment 29. The Forest and Mineral Wealth of India 30. The Agricultural Wealth of India 31. Irrigation in India 32. The Power Resources of India 33. Labour 34. Quantity of Labour 35. Efficiency of Labour 36. The Population of India 37. Capital 38. Enterprise 39. Organization 40. Division of Labour 41. The Scale of Production 42. Forms of Business Organization 43. Nature and Problems of Production in India]

CHAPTER 23

MEANING OF PRODUCTION.

A school of French economists of the 18th century, the Physiocrats, gave currency to the belief that agriculture is productive in a special and particular sense. They even went so far as to characterize manufacturing and mercantile pursuits as sterile, or unproductive. Complete knowledge of the real nature of production has emancipated most minds from these misconception.—Seager

§ 1. WHAT DOES PRODUCTION MEAN ?

Human beings have to make some effort in order to satisfy their wants. This effort is meant to change the form of the existing matter in such a way that it may acquire the desired utility, i.e., the want-satisfying power. The existing matter may be of no use in its original state; but after a change in its form is brought about, it comes to possess utility. Obviously, what a man creates by his effort is not matter, matter in fact cannot be created, but utility. The transformation of matter resulting in the creation of utilities is known as Production. Production may, therefore, be defined as the creation of utilities.¹

Let us take some concrete examples. A mason, building a house, simply puts bricks, mortar and cement in such an order as to give them the shape of a house. He does not create matter—bricks, mortar and cement are not made by him; he simply creates utilities—the house has greater utility than the utility of bricks, mortar and cement separately. Similarly, a tailor first cuts pieces of required shape from a roll of cloth and then stitches them with thread, and prepares, say, a coat. He does not create matter—cloth or thread are not made by him; he simply creates utility—the coat has greater utility than the articles it is made of. A weaver, again, does not create cloth but re-arranges the yarn in such a manner that cloth is produced which has greater utility than yarn. A potter in making pots out of clay, a goldsmith in making ornaments out of gold, a carpenter in making chairs out of wood and a miner in digging out ore from the bowels of earth, all create utility, and not matter, and are, therefore, producers. By production, it may be repeated, we mean the creation of utilities and not of matter.²

Production as a Branch of Economics

Production as an economic act may well be differentiated from production as a

¹To create new matter is more than it is given to man to do. Hence, by the term production, in its widest sense, we mean simply the bringing forth of new goods—the discovery of new utilities, the change of transformation of already existing goods into new utilities. In a secondary and more limited sense, production is an increase of resources, in so far as goods produced satisfy greater human wants, than those employed in the production itself, Roscher, *Principles of Political Economy*, Vol. I, p. 119. (Translation from the German by Lalor.)

²The definition of production as the creation of utilities is, in the opinion of Prof. Nicholson and others, not strictly accurate. Economics they say, is not concerned with each and every type of utility; it studies a utility only if it has value. Economics studies wealth which consists of goods and services having value-in-exchange; so that those goods and services which have no value-in-exchange are not studied in Economics. Strictly speaking, therefore, production should be defined as the "creation of values". Professor Nicholson defines production as the "creation of economic utilities"; and thinks that by so defining it we will get rid of several vague and inconsistent ideas popularly associated with this term. But as we have the term 'value' to connote the same sense as economic utilities, it will be better to define production as the creation of value,

branch of Economics. In the former sense, production is the creation of utilities ; in the latter sense, it is that division of Economics which studies the problems relating to the production of wealth. Students should clearly note these two applications of the term 'production'.

§ 2. KINDS OF UTILITY

Utilities are created in six different ways and are divided into six classes accordingly. Corresponding to them are six types of the process of production.

(1) *Form Utility*. When utility is created by changing the form of the matter, it is called form utility. The carpenter who gives to a log of wood the form of a chair ; the blacksmith who gives to the iron the form of a hammer ; and the goldsmith who gives to the gold the form of a necklace, all create form utility. In the creation of form utility, it has been aptly remarked, there is the widest possible range of operations, mechanical or chemical, from that of the agriculturist by whose intervention the black earth of the prairie is transmuted into golden grains, to that of the lace-maker whose whole industry is to arrange his gossamer into fantastic shapes.

This form of production includes all the extractive and manufacturing industries. Extractive industries are those industries in which men are engaged in extracting or drawing forth raw materials from the lap of Nature ; for instance, agriculture, mining, forestry and fishery. Manufacturing industries, on the other hand, are those industries which give different forms of useful articles to the raw materials, for instance, cotton textile mills, sugar factories and steel factories.

(2) *Place Utility*. The utility created by the removal of an article from one place to another, is known as place utility. Generally the article in question is plentiful at the place from where it is transported, and scarce at the place to which it is removed. For example, Kashmere fruits have greater utility in Allahabad than in Kashmere ; timber has greater utility in a pulp factory or in a carpenter's workshop than in a forest ; sand has greater utility in the heart of a city, where it may be used for the construction of buildings, than in a desert or on the bank of a river. The carriage of all these things from their respective places of origin to their respective places of consumption increases their utility. Transportation, therefore, is a productive process.

(3) *Time Utility*. The utility which is created through the preservation or storage of a commodity for some time, is known as time utility. There are some commodities which acquire greater utility with the passage of time. Old wine, for instance, is considered to be far more tasteful than fresh wine. Old rice similarly possesses more utility than fresh rice. Again, a cake of ice which has no utility in the winter may acquire utility through being kept over into the following summer. Such processes of preservation and storage are, therefore, productive processes. Accordingly the trader, who purchases goods at the time when they are in plenty and cheap and sells them at the time when they are comparatively scarce and dear, is a producer.

(4) *Possession Utility*. Possession utility is the utility which is created by transferring the possession of an article. Possession utility is created because the transferee derives greater utility from the possession and use of the article than the transferor. For instance, books and stationery kept in the shelves of a shop-keeper do not have as much utility to him as they have to their purchasers. The processes of purchase and sale are, as such, productive processes and shop-keepers are producers.

(5) *Service Utility*. The utility created by the rendering of some service not embodied in a material object, is known as service utility. All the personal services, which are rendered directly to the person of the consumer, create service utility. Similarly all the public services, which benefit citizens through the agency of the

State, create utility. The teacher who teaches the student, the doctor who cures the patient, the actor who acts, the dancer who dances, and the constable who protects life and property of the citizens, all create service utility and are producers.

(6) *Knowledge Utility.* The utility which is created through the impartation of knowledge is known as knowledge utility. A good example is an informative advertisement. One may not know the advantages of tooth-paste, which may, therefore, have no utility to him; but if an advertisement tells one its attributes and advantages, it may begin to appear very necessary. Its utility is, thus, created by the advertisement. Advertisements which convey knowledge utility are productive.

The above discussion shows that the term production is fairly wide. A *farmer* is a producer because he creates form utility. So is a *trader* who creates place utility. *Domestic servants* are producers as they create service utility. Carpenters, black-smiths, businessmen, lawyers, doctors, teachers, engine drivers, advertisement-framers are all producers.⁸ But a *college student* is not a producer because he does not create any utility as student.

§ 3. PRODUKTIVE OCCUPATIONS

Productive occupations may conveniently be divided into the following classes:

1. Industrial Occupations

These occupations are concerned with production of material objects. They are divisible into: (a) *Extractive occupations* which are concerned with the extraction or obtainment of materials from the lap of Nature; and (b) *Manufacturing occupations* which concern themselves with the conversion of raw materials into finished products.

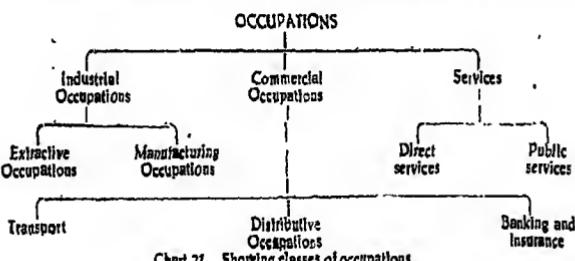


Chart 21. Showing classes of occupations.

2. Commercial Occupations

The occupations which provide links between producers and consumers, i. e., help in the transfer of goods from producers to consumers, are known as commercial occupations. Such occupations are of three varieties.

(a) *Distributive.* They include the activities of the persons who actually dis-

⁸In early times, there was in France a group of economists, known as Physiocrats, who held that agriculture alone is productive, other occupations being unproductive. Physiocrats were followed by Mercantilists, according to whom commerce alone was productive. Adam Smith, the Father of modern Economics, later on extended the scope of production to the creation of all the material objects. The scope has, in modern times, been still more widened so as to include the utility of any and every kind, whether embodied in a material object or not.

tribute goods among consumers directly or indirectly. Whole-salers, retailers, commercial travellers are all engaged in distributive occupations.

(b) *Transport.* It relates itself to the movement of goods from one place to another. Railway transport, motor transport, etc., belong to this category.

(c) *Banking and Insurance.* Banks finance the movement of commodities and also give monetary help to wholesalers, retailers and consumers in diverse ways. Protection against fire and sea risks and other contingencies is provided by insurance companies.

3. Service

The professions of rendering services are those in which service is rendered either direct to consumers or to the public. The former is known as direct service; and the latter, public service. The services of doctors, lawyers, teachers and domestic servants are direct services. The services of civil servants, High Courts Judges and constables are public servants.

TEST QUESTIONS

1. Explain the meaning of Production fully.
2. "Production is the creation of economic utilities." Comment.
3. Describe the various processes of production.
4. What are the kinds of utility you know of? Describe fully.
5. Are these producers: Musicians; traders; sweepers; teachers; stock-exchange dealers; speculators; actors; painters; sadhus; Insane persons; wives?

EXAMINATION QUESTIONS

1. What do you understand by "Production"? Consider whether the following are productive workers: (a) farmer, (b) trader, (c) domestic servant, (d) College student. Give reasons. (Rajputana, I. A., 1940)
2. What is the meaning of production in Economics? (Punjab, I. A., 1934)
- B. Explain production. What are the factors of production? (Calcutta, I. A., 1927)

CHAPTER 24

FACTORS OF PRODUCTION

Thanks to a tradition dating from the time of the first economists, three agents of production have always been distinguished; land, labour and capital. This three-fold division has the advantage of simplicity, and there seems to be no need to abandon it.—*Glaze*

§ 1. FACTORS OF PRODUCTION

There are certain things which contribute to production. They are, therefore, called the factors of production. The factors of production are chiefly two : (i) the personal exertion or effort of human beings ; and (ii) the objects to which the exertion is applied. If a hunter wants animals, he must make an effort to kill them ; and the animals which he wants to kill must exist. Similarly, the grass-cutter who wants to cut grass must devote himself to the purpose and the grass which he wants to cut must be in existence. These two requisites are indispensable for production ; without either of them, no production is possible. These two requisites of production are known in Economics as (i) *Labour*, which refers to the personal exertion of human beings ; and (ii) *Land or Gifts of Nature*, which signifies the objects provided by Nature and which men adapt for their use.¹

The importance of these two factors of production was realised by man during the days of his earliest habitation on this planet. It was also appreciated by him fairly early that his efforts could be made more effective if he could have some implements or weapons to aid his efforts. The primitive hunter had realised that he could kill more animals if he had a spear ; and the grass-cutter had similarly felt that he could cut grass quickly and plentifully if he could have a hook. This external implement or appliance, which increases the effectiveness of human efforts, and which emerged as a third factor of production at an early stage of civilisation, is known as *Capital*.

These are the three chief requirements of productive effort, namely,

- (1) The *Natural*—Gifts of Nature.
- (2) The *Personal*—Man's own energy and skill.
- (3) The *Artificial*—That which man has made to help him in his effort.

Wants	leading to	Efforts	Requiring	Natural forces	In	Production of wealth	which brings satisfaction of wants
				Personal activity	resulting in		

Fig. 22. Explaining the factors of production.²

¹There are two essential factors in all productive processes : nature and man. Nature figures in production as an aggregate of materials and blind forces. Acting in conformity with invariable laws, she destroys as readily as she creates.... Man, on the contrary, appears as a being with conscious purpose. He also destroys—not ruthlessly, however, as nature seems to do, but in order to gratify his wants.—*Senger, Op. Cit.*, p. 123.

²Adapted from Penson, *Op. Cit.*, p. 82.

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Other factors also came to be recognized a little later. With the passage of time and advancement of learning, production took a complex form; wealth began to be produced on a large scale, in big factories and large farms. Such production required enormous natural gifts, immense labour and considerable capital, all of which had to be systematically organised in the act of production. The organization of production, i.e., the bringing into effective co-operation of the various factors, became a very important and separate factor of production. *Organisation* occupies a very important place in the production of wealth in modern times.

Production on large scale involves considerable risk and uncertainty. If the goods produced are not sold, enormous loss is suffered. The risk has become especially great because of the fact that the markets for commodities now tend to become international. *Risk-taking or enterprise* has thus appeared as another factor of production.

The factors of production are, therefore, five in number: (i) Land or Gifts of Nature, (ii) Capital, (iii) Labour, (iv) Organisation, and (v) Enterprise. Of these factors of production, the last three are the forms of human activity, whereas, the first two are the external aids to human effort.

The meaning of the five factors of production as explained above is only provisional. Their exact definitions will be given in their proper places.

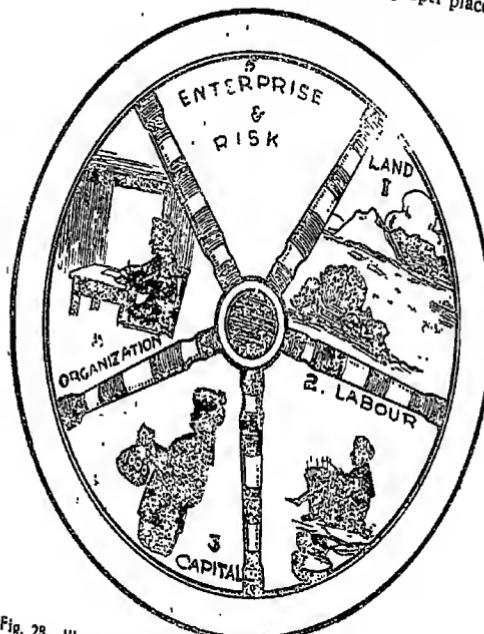


Fig. 28. Illustrating Factors of Production or Wheel of Production.

Factors and Agents of Production

The term *factors of production* should be distinguished from the term *agents of production*. Factors of production signify the actual things which are required for

ptroduction ; while the suppliers of these are known as the agents of production. Land, labour, capital, organisation and enterprise are factors of production ; while landlords, labourers, capitalists, organisers and entrepreneurs (or enterprisers) are agents of production.

Illustration

The various factors of production used by, say, a village weaver, a Benares brass-worker and a cotton textile factory-owner, may be studied on a comparative basis with a view to elucidate and illustrate their relative importance in different forms of production.

Land or Gifts of Nature. The village weaver does not require much land or gifts of nature. He simply needs a small plot of land where he can fix up his loom ; he does not use water power or electricity. The Benares brass-worker generally needs more land to set up his workshop, through electric power is rarely used by him. The cotton textile factory requires pretty large quantity of land. The factory occupies a big plot of land while electric power is used for the operation of machinery. Its climatic requirements are also definite for the atmosphere must be humid so that the thread may not break when it is being spun.

Labour. The village weaver does not require much labour. Generally he depends upon his personal exertion and is sometimes helped by the women and children of the family. The Benares brass-worker requires larger amount of labour. He works himself and also employs some apprentices or labourers. In a modern cotton textile mill, however, immense quantity of labour is needed, employing as it does, hundreds and thousands of hands each day.

Capital. A village weaver requires small capital for the purchase of his ordinary loom, and raw material which is generally cheap. The Benares brass-worker has to manage far larger capital for he has to equip himself with various implements like chisels, furnace, etc. The raw material used by him is also more costly. The capital invested in a cotton textile mill surpasses both of them. The large factory buildings, the gigantic machinery, huge stocks of raw materials and large stock of goods awaiting sale, involve enormous capital.

Organisation. The village weaver does not require much organising skill in his trade which is usually simple and of a small scale. The Benares brass-worker, who has to handle more capital, requires the organising skill to a greater degree ; but his need is not considerable. Organisation assumes supreme importance in a modern textile factory. In the acquisition of gifts of Nature, labour, capital and enterprise and in bringing them into the most effective co-operation, real skill of organisation is required.

Enterprise. In the trade of village weaver with small capital and small output, risk or enterprise is meagre. The brass-worker has to undertake greater risk because he invests more capital and his output is larger. The greatest risk is borne by the owner of a modern textile factory who has to look after large markets, who cannot expect a fixed demand for his produce, and who has large capital at stake.

§ 2. RELATIVE IMPORTANCE OF THESE FACTORS

Attempts are sometimes made to discuss the relative importance of different factors of production. Such attempts are associated with much difficulty for two reasons. Firstly, when all the factors of production are necessary in the act of production, it is rather difficult to decide which is more important and which is less important. Secondly, the owner of every factor of production wants that greater importance be attached to the factor owned by him. Capitalists award the first place to capital ;

labourers to labour ; landowners to land whereas organisers and enterprisers do not lag behind in pushing forward the claim of their priority.

The importance of these factors can be easily shown. Of all the factors of production, labour plays an active part and sets the whole productive machinery in operation. Nature is, however, absolutely passive and merely obeys man, often after long resistance. Nevertheless, whenever we have to produce material wealth, nature is found indispensable. The activities of man cannot achieve anything in a vacuum ; they operate upon certain materials furnished by nature. Capital also plays a passive part ; it is not even a primary factor of production. Logically, as well as chronologically, it is derived from land and labour ; and has been named as "stored up labour".³ Organisation and enterprise are special forms of human activities and have acquired special prominence during these days of large scale production and international markets. It can now be appreciated by the reader how difficult it is to attach relative importance to each of the five factors.

But we may hazard the observation that according to the stage of economic progress attained by a community, some factor comes to occupy a more prominent position than others. For instance, in the earliest stage of human habitation on the earth, Nature's control over man was supreme ; and land or gift of Nature was the most important factor of production. As man made progress, his control over Nature began to increase ; labour gained an upper hand over Nature ; and the former began to be regarded as the most important factor of production. Still later, capital began to be used in production in such enormous quantities, particularly after the introduction of gigantic machinery driven by artificial power, that capital successfully challenged the supremacy of labour. In recent times, with a tremendous increase in the scale of production and the international character of markets, organisation and enterprise have come to the forefront.

According to some economists, there are only two factors of production : land and labour. Capital, they say, is appropriated from gifts of Nature by human labour, and is simply an "instrument of production." Enterprise and organisation are, again, only special varieties of labour. Land and labour, therefore, are the *primary* factors of production ; capital, organisation and enterprise being only *secondary*. Of the primary factors of production, *i. e.*, land and labour, man is active whereas Nature is only passive. Labour is, therefore, the most important factor of production.

TEST QUESTIONS

1. What do you mean by a factor of production ? Distinguish it from an agent of production.
2. What are the factors of production and how and why did they come into being. Show their relative importance.

EXAMINATION QUESTIONS

1. Describe and compare the combination of factors of production, (a) in the case of village weaver or potter, (b) in the brass industries of Benares or Moradabad, and (c) in a cotton spinning mill. (U. P. I. A., 1927)

Land, Labour and Capital have been called the three requisites of production. Explain this statement and offer any criticism upon it that you may think desirable. (Punjab, 1929 and 1937)

ATTENTION

The problem of the *mobility of factors of production* has been discussed under Distribution in Book V, Chapter 59, to which a reference may be made, if necessary.

³Capital is an intermediate product of nature and labour, nothing more. Its own origin, its existence, its subsequent action, are nothing but stages in the continuous working of the true elements, nature and labour—Bohm-Bawerk, *Positive Theory of Capital*. (Translation from the German by Smart) p. 95.

CHAPTER 25

PRODUCTIVE EFFICIENCY

Efficiency is the watchword of future industrial progress, growth, and expansion. The nation which produces with the greatest efficiency will be the one which will lead the van of industrial nations.—*Briggs*

Every line of business, be it publishing or printing, shoe-making or cloth-manufacturing, or of any other type, engages a large number of firms and companies. All such business units are not equally successful. Some firms make large profits, while others, engaged in the same trade, are hardly able to escape losses. Certain companies pay as high as 20 per cent dividend (profit) to their share-holders, while others fail to declare any dividend at all. Why is there such a great difference in the earnings of the several units? It is chiefly due to variations in the productive efficiency of the establishments. Those firms and companies which are very efficient earn high profits, whereas those which are inefficient are run at a loss. The question of productive efficiency is, therefore, the one which deserves further study.

Productive efficiency may be defined as the capacity to produce more goods, or better goods, or both, during a given time. It is generally expressed as the ratio between the actual performance of an operation and the maximum performance which has been determined to be possible.¹

(i) *Internal Conditions*, i.e., the conditions prevailing within the business unit: and

(ii) *External Conditions*, i.e., the forces and factors affecting the success or otherwise of the business unit from without, e.g., means of transport, the availability and extent of markets, and the price ruling in the market.

Internal Condition

Internal conditions of efficiency are those which arise and operate in the undertaking itself. They have to do with the way the work is done. They are divisible into two broad classes:

(a) *The efficiency of each factor of production.* By efficiency of a factor of production, is meant its suitability for the purpose to which it is applied. The greater the efficiency of a factor of production, the greater will be the efficiency of production as a whole, and higher will be the profits earned, other things remaining the same. The conditions determining the efficiency of each factor shall be treated further in their proper places.

(b) *The excellence of the proportions in which these factors are combined.* Productive efficiency depends not only on the efficiency of each individual factor, but also on the excellence of the combination of the various factors of production. If an ideal combination is reached, maximum profits are earned; while the earning declines as this ideal combination is departed from. The attainment of the ideal combination is not an easy task and is preceded by a long and laborious process of trial and error.

¹Efficiency has become a separate subject of study. For detailed study, see Carlson, *The Industrial Situation*; Duncan, *The Price of Inefficiency*, etc.

External Conditions

The external forces and factors which affect the productive efficiency are several. They affect, chiefly speaking the marketing of the produce and the problem whether the price obtained is sufficient to give adequate rewards to the various agents of production. The important ones of the external conditions are :

- (1) The localisation of industry and the nearness of the market ;
- (2) The price ruling in the market ;
- (3) The competition from other producers ;
- (4) The excellence of the means of transport ;
- (5) The efficiency of financial institutions ; and, above all,
- (6) The economic policy of the Government

Each of these elements has its own special importance ; so much so that the attempts of the producer to achieve maximum productive efficiency may be frustrated by the absence or inadequacy of any one of them.

TEST QUESTIONS

1. What is meant by the efficiency of a factor of production ?
2. If your brother asks you why is one company run at a profit while the other suffers a loss, what reply would you give ?
3. What do you mean by internal and external conditions determining the productive efficiency of a business unit ? Explain fully.

EXAMINATION QUESTIONS

1. What is meant by the efficiency of a factor of production ? On what does the efficiency of land and capital depend ? (U. P., I. A., 1940)
2. What do you understand by 'efficiency of a factor of production' ? Do you think the factor of production—labour—is efficient in India ? (U. P., I. A., 1952)

CHAPTER 26

THE LAWS OF RETURNS

The Tendency towards diminishing returns is not an economic theory, but is one of the most commonplace facts of agriculture. The very existence of rental and sale values of land sufficiently attests it.—
Davenport

§ 1. INTRODUCTION

If a manufacturer, or a cultivator, or any other businessman wants to increase his output, he has to increase the quantity of the various factors of production used in his business. The returns due to additional quantities of productive resources are not fixed. In some cases the businessman finds that if he increases the quantity of the various factors of production the return (*i.e.*, the output) due to each successive dose (or unit) of productive resources will go on increasing. This tendency of the return due to each successive dose to go on increasing is known as the *Law of Increasing Returns*. This tendency encourages a businessman to increase the scale of his business. This, however, does not always happen. In some cases the return due to each successive dose of productive resources goes on diminishing. This tendency of the returns due to successive doses to go on diminishing is known as the *Law of Diminishing Returns*. In certain cases, the return due to each successive dose will be found to remain fixed or almost constant. This tendency of the return due to each dose to remain constant is known as the *Law of Constant Returns*. These three laws of return, occupy a central position in production and need detailed study.

§ 2. THE LAW OF DIMINISHING RETURNS

The Law as Applied to Agriculture

The law of diminishing returns has special application to agriculture and is usually associated with it. Every cultivator knows that this law operates and he benefits by this knowledge, though he cannot express it in the shape of a law due to his illiteracy.

Any cultivator would tell you that, after a certain stage in cultivation, the application of an additional dose¹ (or unit) of labour and capital to a particular plot of land does not bring about as much return as the previous dose. For instance, if the first unit produces 50 maunds of rice, the second unit would produce, say, 47 units, the third only 41 units and so forth. Additional dose of labour and capital, applied to the same plot, thus gives diminishing returns.² This tendency is known as the *Law of Diminishing Returns*.

¹The term "dose" of labour and capital was first used by James Mill who is followed by Marshall, and has now become a permanent acquisition to economic literature.

²If things were not as they are in this respect if we would increase the crop of a given piece of land indefinitely, upon the sole condition of proportionately increasing labour and expenditure, the tillers of the soil would not hesitate to do this; instead of increasing the size of their farms, they would reduce them to the smallest possible area, because the smaller the area, the easier it is to manage a farm. The simple fact that things are not as we have just supposed, and that poorer and less favourably situated land is in fact constantly brought under cultivation demonstrates that in reality we cannot expect a piece of land under given conditions to yield more than a limited crop.—Charles Gide, *Principles of Political Economy*, pp. 95-96.

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It should be noted that the total yield does certainly increase after the application of every fresh dose. But since the return due to the application of each fresh dose is persistently diminishing, the total return increases at a diminishing rate or less than proportionately.

This Law of Diminishing Returns as applied to agriculture has thus been formulated by Marshall : "An increase in the capital and labour employed in the cultivation of land causes, in general, a less than proportionate increase in the amount of produce raised, unless it happens to coincide with an improvement in the art of agriculture." It should be carefully noted that the law relates itself to the amount of the produce raised and not to its price.³

The reason why diminishing returns are obtained from land is not far to seek. The productive capacity of the soil is limited and is subject to exhaustion. When the first dose of labour and capital is employed to a particular plot of land, it uses up a certain portion of the productive capacity of the land. The second dose, when employed, has less productivity to exploit as compared with the first dose; consequently the yield due to the second dose is not so heavy as due to the first dose. This phenomenon goes on repeating itself with every successive unit.⁴

Illustration

We shall illustrate this law by a concrete example. Suppose a cultivator has got a plot of land. He applies to it the first dose of labour and capital, which gives an yield of 90 tons of rice. The application of the second dose of labour and capital pushes up the total yield to 160 tons. When he applies the third dose, the total output is raised to 220 tons. The fourth dose similarly increases the total produce to 265 tons; the fifth to 300 tons; and the sixth to 320 tons. The application of each new dose increases the total output but the output due to each successive dose goes on diminishing. The first dose, in our illustration, produces 90 tons of rice. The first and second doses together produce 160 tons; the second dose, therefore, produces only $(160-90=)$ 70 tons of rice. Similar calculations will show that third dose yields 60 tons; the fourth, 45 tons; the fifth 35 tons; and the sixth, 20 tons. These results are tabulated below :—

Doses of Labour and Capital	Total Output (in tons)	Output due to each dose (in tons)
1st	90	90
2nd	160	70
3rd	220	60
4th	265	45
5th	300	35
6th	320	20

Diagrammatic Representation

The law can be represented diagrammatically as follows :

³It is important to remember that the return to capital and labour of which the law speaks, is measured by the amount of the produce raised independently of any changes that may meanwhile take place in the price of produce.—Marshall, *Economics of Industry*, p. 94.

⁴Since diminishing returns are obtained at a fixed cost, the cost of production per unit goes on increasing. Hence this law is also styled as the *Law of Increasing Costs*.

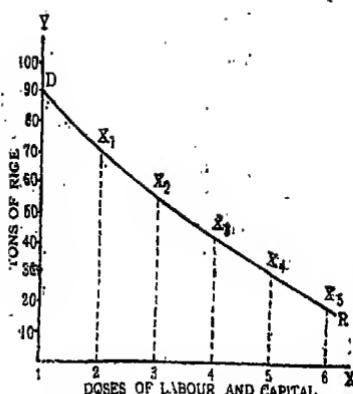


Fig. 24. Illustrating the law of diminishing returns.

In this figure doses of labour and capital have been measured along OX axis, and tons of rice along OY axis. The figures of the output due to the several doses as given in the above table have been plotted on the graph and the points have been joined. The curve DR is thus obtained. This is the curve of Diminishing Returns. It is a slopy curve which indicates that the returns due to each additional dose go on diminishing as the number of doses of labour and capital goes on increasing. OD line represents the return due to first dose; $2X_1$, the return due to second dose; $3X_2$, that due to third dose, and so on. These lines go on decreasing in size, thus illustrating the diminution in returns due to successive doses.

Limitations of the Law

The statement of the law as given by Marshall consists of two very significant expressions: (i) *in general*, and (ii) *unless it happens to coincide with an improvement in the art of agriculture*. These two expressions constitute the two limitations of the law and are discussed below.

(i) *In General*. The law of diminishing returns is true in general; but it does not operate if the land is under-cultivated, i. e., if labour and capital employed to a plot of land are not adequate to use up fully its productive capacity. To give a concrete example, if a cultivator owns 1,000 acres of land and devote negligible quantities of labour and capital to it, the productive capacity of that big plot will not be completely exploited. And if he applies another dose of labour and capital to that plot, the yield due to it may increase because of the fuller utilisation of the productive capacity of the soil. But once the stage of full cultivation, that is, full utilisation of the productive capacity of the land is reached, the diminishing returns will certainly be obtained. The law sets in operation only after the point of full cultivation of land, if we consider the output obtained from a piece of land from the very beginning, we will find that the application of the first few doses gives increasing return; to be followed by constant returns; after which diminishing returns appear. Fig. 25 on p. 162 represents these varying tendencies; AB represents increasing returns, BC constant returns and CD diminishing returns. The stage of full cultivation is reached at the point C; and as is shown by curve CD, diminishing returns are obtained after this point. 'In general' drops a curtain over the phenomenon up to the dotted line O'C; and offers to our view simply CD curve, the curve of diminishing returns.⁵

⁵Some writers feel that 'in general' means that law is generally true in a majority of cases, but there are a few cases in which it does not hold true. This interpretation of the term 'in general' is incorrect because there is not a single case in which the law does not operate.

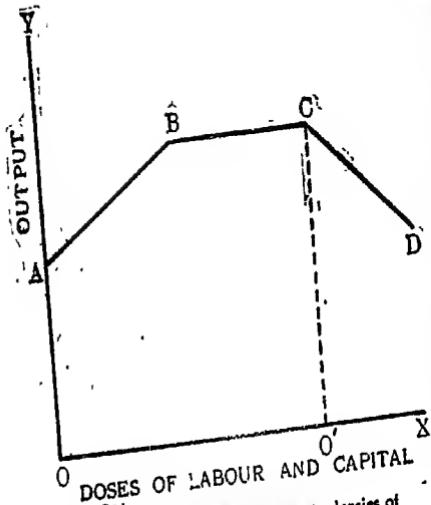


Fig. 125. Curve showing the varying tendencies of the Laws of Returns.

(ii) *Improvements in the Art of Agriculture.* The law will operate only if the application of successive doses of labour and capital does not happen to coincide with an improvement in the art of agriculture. It is thus a static law and does not apply to progressive agricultural industry.⁶ If means and methods of production continue to remain the same, the law is bound to operate. Improvements in the art of agriculture, like the use of improved implements and machinery, utilisation of better fertilisers, and provision of improved irrigation facilities, counteract the tendency of the soil towards exhaustion; they may, in some cases, even increase its productive capacity, irrespective of the number of doses already applied to it, and cause successive doses to yield increasing returns. The law, therefore, holds true only if no such improvement takes place.

The above are the two important limitations of the law. To these may be added another limitation, if we may venture to call it as such, namely, that it applies to the quantity of the produce raised and not to its price. As already remarked, the price of the produce raised is a factor with which we have got nothing to do here. It is the quantity of the produce raised which we have to keep in view.

Decreasing Returns and Increasing Cost

In the above discussion we have focussed our attention on return due to each successive dose; and we have seen that this return goes on diminishing. But what happens to cost per unit? Does it increase when returns decrease? Yes, that is so. The explanation is simple. The cost of each dose is by assumption the same and unchangeable hence when an additional dose gives less return, it means that the incurring of the same cost results in a declining return. The cost per unit, as such, goes on increasing. This can be illustrated with the help of the table given on page 160. Suppose the cost per dose is Rs. 100. This means that the cost per unit, when only one dose is applied, is $\frac{100}{1} =$ Rs. 1'11. The cost per unit goes up to Rs. $\frac{100}{2} =$ Rs. 125 when the second dose is applied. Further results are set out in the following table: -

⁶The law of diminishing returns is presented as applying not to progressive agricultural industry as a whole, but merely to a particular area of land cultivated in accordance with the knowledge available at a particular time. It is a static law, helpful in accounting for the phenomena of any given period, such as migrations of population to new lands, the slow rate at which the wealth known to be contained in a particular time is taken out, or the failure to get every possible horse power out of a waterfall, but not a law of progress. Some economists, it is true, have believed an analogous law of diminishing returns to hold good over long periods of time, of progressive agricultural industry as a whole. They admit that in the last one hundred and fifty years this law has not applied to progressive countries, since invention and discovery have kept well in advance of any tendency of population to increase or natural resources to become exhausted, but they maintain that these years have been highly exceptional. Seager, *Op. Cit.*, pp. 180-81.

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Doses of labour and capital

1st	Total cost Rs.	Total output (Tons)	Cost per unit Rs.
		2nd	
3rd	100	90	1.11
4th	200	160	1.25
5th	300	220	1.36
6th	400	265	1.50
	500	300	1.66
	600	320	1.87

If we plot the cost curve, it will show an upward tendency. The CC' curve, which is the cost curve, is a rising one,

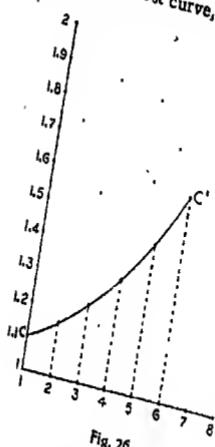


Fig. 26.

Application of the Law

In the above description of the law, we have studied its application to agriculture where it is universally true. At some time in the progressive cultivation of every field, sooner or later according to the state of agriculture, a stage will be reached after which every additional dose of labour and capital will result in diminishing returns. The law applies to various other industries as well. It applies, for instance, to grazing lands, to the mine, the forest and the sea. It governs the cost of producing fish and whale oil; fuel and timber for manufactures, coal, iron and copper, for the furnace and the forge; wool for clothing, and the carcasses of cattle and sheep for food. The more important applications of this law are discussed below:

(1) *Fisheries.* Fishing in ponds, tanks and lakes is subject to the law of diminishing returns. Just as the application of more doses of labour and capital uses up the capacity of the soil more and more, similarly every catch makes the fishing

It is thus clear that if we focus attention on cost per unit and not on return, we can say that as we apply successive doses of labour and capital, cost per unit in general goes on increasing, unless there is a simultaneous improvement in the art of production. In this shape, this is known as the Law of Increasing Cost. The Law of Decreasing Returns, in other words, is also known as the Law of Increasing Cost.

General Statement of the Law

We have discussed above the law of diminishing returns as applied to agriculture where it operates very forcefully and without exception. But it applies to other spheres as well. In general terms, it can be stated as below: In general, if one factor of production is kept fixed, the application of every additional dose of other factors brings about diminishing returns, other things remaining the same.

bank or lake less prolific, with the result that further efforts are not rewarded equally well.

Such is probably not the case with sea fisheries. Sea fish multiply so fast that fishing by men does not diminish their number. Thus a fish known as *Long* lays down 18,500,000 eggs in a year, i.e., from 50,000 to 60,000 eggs per day. Other varieties of fish are also surprisingly procreative. Some writers, however, seem to hold the opposite view and feel that even sea fisheries are subject to the law of diminishing returns.

(2) *Mines and Quarries.* The law of diminishing returns operates in the working of mines and quarries as well. As the labour and capital applied in the working of a mine increase, the lower and deeper strata have to be dug. Deep digging requires elaborate, costly and laborious arrangements for proper lighting, for conveying air further inside the mine and for transporting the mineral to the pithead. The expenditure of each successive unit of labour, and capital, as such, produces less than proportionate mineral.

(3) *Building of Houses and Shops.* The law is also applicable to the building of houses and shops. If more labour and capital are applied to a particular building, higher storeys will be raised. The wastage of material and time, and the cost involved in the construction of these storeys will go on increasing for bricks, lime, mortar and workers will have to be carried much higher than before. The application of each dose of labour and capital will, therefore, be rewarded less handsomely than the previous unit.

(4) *Pottery.* Even pottery is subject to this law. Earthen wares are made out of clay which is to be dug out. The deeper one has to dig up with a view to obtain clay, the more labour and time it requires. The return from pottery, as such, begins to decline with the application of further labour and capital.

(5) *Manufacturing.* While agriculture is subject to the law of diminishing returns, manufacturing is said to be subject to the law of increasing returns. This is, of course, true. But if the conditions under which the law is conceived to apply in agriculture are also present in the case of manufacturing, the law is bound to operate even in the latter. In agriculture we take land as fixed in quantity and other factors are increased in amount. Similarly, in manufacturing, if we keep one factor, say, labour or raw materials, or capital fixed in quantity, and increase other factors, diminishing returns are bound to follow.

§ 3. THE LAW OF INCREASING RETURNS

Just as the law of diminishing returns is applicable to agriculture, similarly the law of increasing returns is applicable to manufacture. If we apply fresh doses of labour and capital to a manufacturing industry, each successive dose will yield increasing returns. This law of increasing returns has been stated by Marshall as below : "An increase of labour and capital leads generally to improved organisation which increases the efficiency of the work of labour and capital".

If we measure the doses of productive resources along OX axis and output along OY axis, the law of increasing returns will be represented diagrammatically by a curve like IR in the following graph :

THE LAWS OF RETURNS

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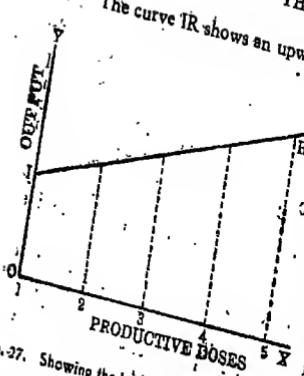


Fig. 37. Showing the Law of Increasing Returns.

other factors are increased. There is no such limitation in the case of agriculture, one factor of production, namely, land, remains, more or less, fixed, while the quantities of factor of production can be combined in an ideal proportion. In the case of manufacture, since the supply of all the factors of production can, therefore, be easily secured. Finally, new inventions and new processes of production appear so frequently and regularly in the sphere of manufactures that they push further away the point of diminishing returns. At any particular time, a manufacturing industry knows certain methods of production and its productive capacity is definitely limited; as such, an increase in the quantities of various factors is likely to set the law of diminishing returns in operation, sooner or later. But fresh inventions and new methods of production appear so swiftly in this field that before the point from which diminishing returns is begun to be obtained is reached, some new improvement is made which pushes this point further away. This point is shifted forward so repeatedly and constantly that it rarely becomes effective.

It should be remembered that returns are obtained by the firm from their sales.

It should be remembered that in the case we have discussed above increasing returns are obtained by the application of successive doses of labour and capital; and as their cost of each dose by assumption remains constant and does not change, it follows that increasing returns are obtained at the same cost. In other words, the cost per unit goes on diminishing. [The reader is advised to take a practical example, work out the cost per unit and plot the cost curve. This curve will be a declining curve. This should be done on the same lines on which we worked out the whole thing in the case of the law of decreasing returns on pp. 160-61 *ante*.] Hence, this law is also known as the law of diminishing cost.

§ 4. THE LAW OF 'CONSTANT RETURNS'

4. THE LAW OF 'CONSTANT RETURNS' Hence, this law is called the law of constant returns.

When the application of fresh doses of productive resources results in an equal return due to each successive dose, the law of constant returns is said to apply. For instance,

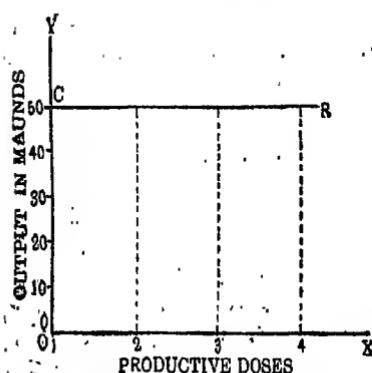


Fig. 28. Showing the Law of Constant Returns.

Fig. 28. Showing the Law of Constant Returns. manufacturing sugar as well as grows sugarcane. The former is subject to the law of increasing returns, and the latter to that of the diminishing returns. These two tendencies may, in such a case, be exactly balanced so that constant returns may be obtained. Such cases, however, are rare in practical life. This law is, more or less, one of probability and of theoretical interest only.

Because the returns due to successive doses remain constant here, it follows that the cost per unit also remains unchanged. Hence this law is also called the law of constant cost.

§ 5. NATURE AND THE LAWS OF RETURNS

Marshallian Approach

In the discussion of the above laws we have specifically mentioned the reasons why each of them sets into operation. Marshall approaches the problem from a different standpoint, namely, the part which Nature and Man play in production. Nature is always and everywhere economical. As such, where Nature plays a predominant role in production, as it does in agriculture, diminishing returns are obtained. Man has been trying from the very beginning of his existence to subdue Nature and to prevent this tendency of Nature from operating. Where he is able to get the upper hand, as happens in manufacturing industries, increasing returns are obtained. In the words of Marshall, "while the part which Nature plays in production shows a tendency to diminishing returns, the part which Man plays shows a tendency to increasing returns. If the actions of the laws of increasing and diminishing returns are balanced, we have the law of constant returns." In purely extractive industries, like agriculture and mining, Nature's contribution is supreme and, therefore, diminishing returns are obtained. In manufacturing industries, on the other hand, human control is prominent therefore, increasing returns are obtained.

Is There Only One Law of Returns?

There are some economists who maintain that there is only one law of return and that is of diminishing returns. The other two laws, those of increasing and constant returns, are only conditions precedent to the operation of the law of diminishing returns. They are simply the passing phases: ultimately it is the law of diminishing returns which operates.

tance, if the first dose produces 50 maunds of sugarcane, two doses may produce 100 maunds, three doses 150 maunds, and four doses 200 maunds; so that the return due to each dose is 50 maunds. If we represent productive resources along OX and output along OY, the law of constant returns will be shown by the curve CR, in the following diagram:

All dotted lines are equal, which shows that the return due to each dose is the same.

This law operates due to an exact counterbalancing of the tendency towards diminishing returns and the tendency towards increasing returns. This may happen, for instance, in a concern which manufactures sugar as well as grows sugarcane. The former is subject to the law of increasing returns, and the latter to that of the diminishing returns. These two tendencies may, in such a case, be exactly balanced so that constant returns may be obtained. Such cases, however, are rare in practical life. This law is, more or less, one of probability and of theoretical interest only.

Because the returns due to successive doses remain constant here, it follows that the cost per unit also remains unchanged. Hence this law is also called the law of constant cost.

THE LAWS OF RETURNS

This point of view is not quite accurate. These are three distinct tendencies, of different types, and should be so distinguished. In a particular enterprise at any particular time, either the law of increasing returns or of constant returns may be in operation; and it would certainly be wrong to say, then, that it is the law of diminishing returns which is operating. It should, however, be recognized that these three laws are intimately connected with each other. This, indeed, misleads some economists to make the above-mentioned assertion.

§ 6. THE LAW OF SUBSTITUTION OR EQUI-MARGINAL PRODUCTIVITY

We have discussed the laws of returns. There is another law of production which should also be included in our survey. This is called the law of substitution or of equi-marginal productivity.

An organiser combines the various factors of production in such a manner as to obtain maximum results out of the given resources. Maximum output at minimum cost, is the ideal which he follows. The realisation of ideal proportions in which several factors should be combined, is a very difficult task; and herein lies the 'real efficiency of the organiser. The ideal is achieved through a lengthy process of 'trial and error.' An organiser is always on the look-out of substituting a cheap and efficient factor of production for a comparatively costly and inefficient one. If his efforts are continued with success and the said ideal is achieved, the marginal productivity of each factor will be found to be more or less equal. This law or principle is known as the law of substitution or equi-marginal productivity. The law of substitution, as applied to consumption, is known as the law of equi-marginal utility. As applied to production, it assumes the name of law of equi-marginal productivity.

There are numerous cases in which one factor is substituted for another. The following are some examples:

- (1) An organiser, in need of more space for carrying on production, may either purchase more land or he may raise another storey at the top of the existing building. If he adopts the former course, he will substitute land for capital; and if the latter, he will substitute capital for land. He will of course adopt the cheaper course.
- (2) An organiser, desirous of increasing his output, may employ more labourers or purchase new machinery. If he does the former, he will substitute labour for capital; and if the latter, he will substitute capital for labour.

TEST QUESTIONS

1. Enumerate and illustrate the law of diminishing returns. Indicate its limitations.
2. Does the law of diminishing returns apply to (a) agriculture, (b) fisheries, (c) pottery, (d) mining, (e) manufacturing?
3. State and illustrate the law of increasing returns. Why is it specially applicable to manufacturing industries?
4. State and illustrate the law of constant returns. When does it operate?
5. Indicate the relationship between Nature, Man and the Laws of Returns.
6. There is only one law of returns and that is of diminishing returns. Comment.
7. Discuss thoroughly the law of substitution as applied to production.

EXAMINATION QUESTIONS

U. P. Board

1. How does the law of increasing returns apply to manufacturing industries? In what directions does large-scale production make economies possible? (I. A., 1943)
2. Distinguish between the internal and external economies. How do they lead to increasing returns in an industry? (I. A., 1940)

8. Explain as clearly and fully as you can the Law of Increasing and Diminishing Returns. (I. A., 1939)

9. State clearly the law of Diminishing Returns. What are its limitations? (I. A., 1981)

10. Explain how increasing returns result from division of labour, from specialisation of machinery, from transportation on a large scale. (I. A., 1927)

11. Discuss the Law of Diminishing Returns. Is it applicable to mines? To fishing in rivers? To potteries? (I. A., 1926)

12. Explain as clearly as you can the conception of increasing and decreasing returns and consider the part played by internal and external economies in bringing about increasing returns in industries. (I. A., 1925)

13. What is the Law of Increasing Returns? How does it operate in manufacturing industries? (I. Com., 1944)

14. Discuss carefully the Law of Diminishing Returns. (I. Com., 1948)

15. State the law of Increasing Returns and show how it operates in Agriculture and Industry. (I. Com., 1940)

16. Discuss carefully the law of diminishing returns. (I. Com., 1938)

17. State and illustrate the laws of returns. (I. Com., 1986)

18. Explain clearly the law of diminishing returns. Are there any factors which tend to check its operation? (I. Com., 1985).

Rajputana Board

1. Explain the law of increasing returns, and show how the law of diminishing cost follows from it. (I. A., 1944)

2. State and explain fully the Law of Diminishing Returns. (I. A., 1940)

3. Explain the Law of Diminishing Returns both in its intensive and extensive forms. Explain what you understand by the marginal dose of labour and capital as applied in cultivation. (I. A., 1938)

4. State and explain the Law of Diminishing Returns. (I. A., 1985, 1937)

5. State and explain the Law of Diminishing Returns. In what kinds of industries will you expect this law to operate? (I. A., 1938)

6. The return of capital and labour of which the law of diminishing returns speaks, is measured by the amount of the produce raised, independent of any changes that may meanwhile take place in the price of produce. Analyse carefully the limitations on the Law of Diminishing Returns with reference to this statement. (I. A., 1932)

7. State precisely the laws of increasing and diminishing returns and explain the circumstances under which their operation may be withheld or postponed. (I. Com., 1943)

8. State and explain fully the law of Diminishing Returns. (I. Com., 1940)

Patna University

1. Explain the Law of Diminishing Returns and the circumstances in which it can be held in check. (I. A., 1940, Supp.)

2. Explain the Law of Diminishing Returns with reference to agriculture and mention the conditions under which it operates. (I. Com., 1944, Supp.)

3. State and discuss the Laws of Increasing and Diminishing Returns. (I. Com., 1942, Ann.)

Other Examining Bodies

1. Discuss the laws of Returns. 'We say broadly,' remarks Prof. Marshall, 'that while the part which Nature plays in production conforms to the law of diminishing returns, the part which Man plays conform to the law of increasing returns.' Explain. (Punjab, I. A., 1986)

2. Enumerate the Law of Increasing Returns. Does it apply to secondary industries only? Suppose the production of steel in India obeys the law, how will consumers of steel be affected if its production is encouraged. (Punjab, I. A., 1982)

3. Fully explain and illustrate how the cost of production is likely to vary in agriculture under various circumstances. (Punjab, I. A., 1984)

4. What is the law of diminishing returns? How does it affect agriculture? (Nagpur Com., 1942, Arts, 1941)

5. State precisely, the laws of increasing and diminishing returns and explain the circumstances under which their operation may be withheld or postponed. (Delhi, I. A., 1936)

6. 'New countries, extensive cultivation, increasing returns, old countries, intensive cultivation, diminishing returns.' Explain. (Delhi, I. A., 1935)

7. Explain the Law of Diminishing Returns. Indicate how an increase of population in an old and backward agricultural country is likely to affect the following—(a) rent of land, (b) income per head. (Delhi, I. A., 1934)

8. Carefully explain the Law of Diminishing Returns. Show that this Law operates in all branches of industry but that its influence is more evident and pronounced in the extractive industries or wherever the influence of Nature is permanent. (Delhi, I. A., 1938)

9. State and explain the Law of Diminishing Returns as applicable to production. (Delhi, I. A., 1930)

10. Explain the Law of Diminishing Returns with reference to agricultural land. (Bombay, I. A., 1940)

11. Explain the Law of Diminishing Returns with reference to urban building development and mining. (Andhra, I. A., 1944)

CHAPTER 27

GIFTS OF NATURE OR LAND

Much of the economy of society depends on the limited quantity in which some of the important natural agents exist, and more particularly land.—J. S. Mill

§ 1. MEANING OF 'LAND'

Definition of Land

The term *Land*, according to dictionary, means the surface of the ground. In Economics, however, it is used in a wider sense to signify all the gifts of Nature, the surface of the ground being one of them. It includes:

- (1) the surface of the ground on which we live and move about;
- (2) the water covering that surface, e.g., rivers and oceans;
- (3) the minerals hidden below the surface, like coal, gold, etc.; and
- (4) air, heat, light and rainfall.

Soil and sub-soil on which crops grow, topographical construction, geographical location, climatic conditions, navigable waterways, waterfalls, winds, vegetable and animal resources, fisheries, and mines, and natural harbours, are all included under *Land*. In other words, the term *Land* signifies the surface of the earth and the materials above and beneath it. As Marshall aptly observes, "By *land* is meant not merely land in the strict sense of the word but whole of the materials and the forces which Nature gives freely for man's aid, in land and water, in air, light and heat."

Land, Nature, and Gifts of Nature

It will probably be felt by the reader that the use of the term *Land* in this wide sense is somewhat confusing and misleading, especially to a beginner. If he comes across this term in a book on Economics, he may take it in the literal sense to mean the surface of the earth, whereas it may actually signify much more than that. To avoid this possibility of confusion, some economists have begun to use the expression 'Gifts of Nature' in place of *Land*. The term *Gifts of Nature* describes the scope and meaning of this factor of production quite comprehensively and is definitely superior to *land*. There are some writers who also use the term *Nature* for *Land*; but since *Nature* is a word having various shades of meaning, its use is not very advisable.

In the following pages, however, we have made use of the term *Land* in preference to *Gifts of Nature* which is probably the best name that can be given to this factor, because through long usage *Land* has come to occupy a unique position in economic literature and has been used by most economists. It is, therefore, necessary that students should be familiar with its use in the economic sense. Moreover, as Professor Ely observes, "Of what belongs to external nature, it is with land that we have principally to do in Political Economy". This lends further support to the use of the term *Land*.

⁴Marshall, *Principles of Economics*.

INTRODUCTION TO ECONOMICS

§ 2. CHARACTERISTICS OF LAND

Land has certain distinctive characteristics which can be easily pointed out :
 (1) *Fixity in Quantity.* Land is fixed in quantity and cannot be increased. If a mine area of India is one and a half million square miles and cannot yield two million tons. Howsoever we may want abundant sunshine or rain, we must be content with what reaches us by the natural processes. Sometimes the available land can be increased by such means as filling in swamps or by making terraces on the mountains. But this is simply a case of the conversion of potential land into effective land and not an increase of total land. This characteristic of fixity in quantity is not shared by other factors of production, all of which can be increased or decreased.

(2) *Land is Not Produced.* Land is a gift of Nature and is not produced by men. As such, so far as society is concerned, land has no cost of production and, therefore, no value ; but so far as individuals are concerned, land does have value and is purchased and sold like any other commodity.

(3) *Passivity.* Land is a passive factor of production. It does not take an active part in the process of production but is itself acted upon by men and machinery, in production man is the directing, active agent. Nature the obedient, passive agency, land in the heart of a city is suited to the construction of buildings ; a damp plot lying about in a village is suited to the growth of cotton or sugar-cane or jute ; whereas a comparatively dry land with cold climate is meant for wheat.

(4) *Varying Suitability.* All land is not equally suitable for all purposes. The means of communication between it and other lands. Lands nearer to towns fetch higher rents than those farther away. The value of labour and capital is also affected by distance, but not to the same extent.²

§ 3. FUNCTION OF LAND IN PRODUCTION

Land is a primary and indispensable factor of production ; without land no production is possible. However, man may exert himself, even with the aid of all the machinery and skill that he can gather, he can produce nothing unless there is land to which his efforts can be applied. It is land from and out of which we obtain the numerous commodities and forces which make our life complete. From the soil we get the foodstuffs which keep us alive, and the agricultural raw materials which feed the manufacturing industries. Mines similarly provide us with valuable raw material like iron, coal, copper and others which are worked upon in the factories and converted into useful articles ministering to varying human wants. Forests, again, afford timber, and oceans' fish. Even such natural forces as water and electricity are harnessed by human beings for the production of wealth. It is on the surface of land that all our transport lines run ; and even in the air we move about in aeroplanes³. The function of land in production is, therefore, supreme. The importance of land can be well

²Students may find two other characteristics mentioned in the books. They are : (1) Land is permanent, it does not wear out. This is, however, true of the area of land surface and not of its fertility or other gifts of Nature. (2) The location of land is fixed. This again is true of land surface alone.

³The chief ways in which land helps in production are as follows : (1) It affords support for men and the buildings erected on it, (2) its extension permits the movement of men and goods from place-to-place, (3) its geographical features, mountains and rivers etc., aid in many ways, (4) it supplies the materials, vegetable and animal, from which all commodities are made, (5) each portion of it enjoys its share of summer's heat and winter's cold, air, sunshine and rain, without which no form of life could long continue on the earth. See Seager, *Op. Cit.*

appreciated from the fact that all the rich countries of the world are the ones which have been endowed with plentiful gift of Nature.⁴ If U. S. A. is the wealthiest country, it is because she has enormous agricultural, mineral and industrial resources. The same truth applies with full force to Great Britain, Germany, Japan and others. India is unfortunately a country which is very poor in spite of its being liberally endowed with the gifts of Nature, because the latter are not systematically exploited to maximum advantage. It is, however, hoped that with the passage of time and the economical and political progress of the country, this unfortunate feature of our economy will be corrected.

§ 4. EFFICIENCY OF LAND

Efficiency of business unit, we have seen, depends upon the efficiency of each factor of production it makes use of. As land is a very important factor of production, its efficiency is a fundamental necessity for securing the efficiency of entire productive process. By efficiency of land is meant its suitability for the purpose to which it is put. Efficiency is measured by productivity. Other things remaining the same, the land which yields larger output is more efficient than the one which yields less output. The efficiency of land depends upon the following conditions:

(1) *Natural Conditions.* Natural conditions, to a large extent, determine the efficiency of land. Of these conditions, the character of the soil, the climate and the sub-soil water are the most important. Some of these factors can be controlled by human beings. The character of soil, for instance, can be partially changed, but can be fertilising, irrigation and otherwise. The climate cannot be changed, but can be modified through aorestation, construction of glass houses and use of humidifiers. But in all such cases the results are achieved through the application of labour and capital to land and cannot be reckoned as Nature's bounty.

(2) *The Organising Ability.* The efficiency of land also depends upon the manner in which it is used in the process of production and the way in which other factors of production are combined.

(3) *External Conditions.* Then there are some forces and factors working from without, which also affect the efficiency of land. Nearness to the market, the existence of cheap and quick means of transport and such other factors fall under this category. External conditions are very important in determining the efficiency or otherwise of land. It may be that a plot of land is inefficient today because it is far removed from markets and because the means of transport joining it with them are not adequately developed; but if after sometime the means of transport are so much developed that the land is practically drawn to the markets, it may suddenly acquire efficiency.

§ 5. EXTENSIVE AND INTENSIVE CULTIVATION

The cultivator of a given plot of land obtains, more or less, a definite quantity of yield at any particular time. If he wants to increase his produce, he can either (1) bring more land under plough; or (2) he may apply more labour and capital to the same plot of land. The adoption of either of these two methods will increase the output.

⁴The countries of the world most favoured by Nature are evidently those whose soils bring forth the most common necessities of life of the best quality and in the largest quantity In these countries the manufacturing power specially prospers, by means of which the nation attains to the highest degree of mental and social development and of political power. List, *The System of National Economy*, p. 181.

In the former method, the area of cultivation becomes more extensive than before; hence it is known as extensive cultivation. In the latter case, the same plot of land is operated upon by more labour and capital than before; in other words, cultivation becomes intensive. This method of cultivation is, therefore, known as intensive cultivation.⁵

A cultivator wishing to increase his output may follow either of these two methods; but which methods he should select out of these two, is, more or less, a question of cost. If he finds that additional produce can be raised more cheaply by following the extensive cultivation than by following the intensive cultivation, he will adopt the former method. If, on the other hand, intensive cultivation seems to be the cheaper method, he will naturally adopt it. In case, land is so plentiful that it can be had at a nominal cost while labour and capital are comparatively dear, extensive cultivation will be the cheaper method for the obtainment of increased output. The progress of all the countries of the world shows that in early times whenever men felt the necessity of increased agricultural output for supporting increasing population, they resorted to extensive cultivation because land was obtainable in those times merely for the asking. In America the early settlers followed the wasteful process of cultivating a plot of land to be readily abandoned, as soon as its yield deteriorated in favour of a new and virgin land. This method was condemned as "earth butchery"; and was an extreme example of careless extensive cultivation. But, if the land is rare due to pressure of population while labour and capital are comparatively cheap, intensive cultivation is preferred to extensive cultivation. In recent times population has tremendously increased and land values have sprung up sky-high, with the result that intensive cultivation has made rapid progress in almost all the countries of the world. In Denmark and Holland in particular, where population is very dense in comparison to the area available, highly intensive cultivation has to be practised. In the most thickly populated countries of the world, namely India and China, intensive cultivation, though so far held in check due to ignorance and poverty, is becoming common.

It must not, however, be supposed that a country either follows intensive method or extensive method. That is not so. As a matter of fact, expensive and intensive cultivation go side by side in a country for a certain length of time; and while afterwards intensive cultivation may become the more important method, extensive cultivation lingers on for a considerable period and it is rare that it entirely vanishes. The application of intensive method depends mainly upon (i) increasing population and (ii) technical improvement. In the earliest stage of habitation, population is small and technical knowledge limited; hence extensive method is adopted. But as population increases, intensive cultivation becomes growingly necessary and improvement in technique make its adoption possible. At this stage intensive cultivation begins to get popular. In certain cases cultivators may be very backward so that they cannot adopt intensive cultivation. This is the case, for instance, in India. In such a case the speed at which intensive cultivation is adopted will be slow. Nevertheless, the tendency is towards a greater adoption of intensive cultivation; and this tendency gets stronger as population increases further and technical improvements are adopted as a wide scale. And, indeed, we can think of a country where everybody adopts the intensive methods. But this is perhaps an imaginary case and as much remote from existing reality as a country which follows only extensive method. In most of the countries today intensive and extensive methods generally go hand in hand.

⁵It may be repeated here that all the factors of production are, of course, increased when increased output has to be obtained. But in extensive cultivation, it is chiefly land which is increased, other factors are increased much less than proportionately. In the case of intensive cultivation, on the other hand, land remains fixed in quantity while other factors are increased.

The Nature of Cultivation in India

India is a country where population is increasing at a terrific rate. Between 1921 and 1931 it increased by more than 5 crores and almost an equal increase has been recorded between 1931 and 1941. This increasing population has long led to the cultivation of the entire cultivable land; and further increase in the output of agricultural stuffs has been obtained through intensive cultivation.

Another cause of intensive cultivation, besides the pressure of population, is the decay of old handicrafts of India. Due to this decay many of the old artisans and craftsmen lost their old jobs and fell back to agriculture, there being no other occupation in the country which could absorb them.

(a) Firstly, the means of transport and communication have so much developed that the distance between Indian fields and foreign markets has been effectively shortened. Indian agricultural produce can now be sold at handsome prices in foreign markets. The lure of money has driven our cultivators to increase production, which necessity has been satisfied through intensive cultivation, in the absence of free land.

But the process of intensive cultivation has not been carried on smoothly and uninterrupted. Several difficulties and obstacles have checked this process, the more important of which are mentioned below: (i) Ignorance and conservatism of Indian cultivators are said to be the principal obstacles in the way. Our cultivators, in many cases, do not know the importance of intensive cultivation; and even if they know, they do not practise it because it was not practised by their ancestors. (ii) Those who have been in contact with the Indian cultivator know fully well that he is very shrewd in business matters and can easily grasp the suggestions likely to benefit him; but he does not want to dabble in uncertain and untested directions pointed out in an official and unsympathetic manner.

(b) Some obstacle is also due to the ignorance of the demonstrators and propagandists of the right and persuasive method of handling cultivators. Generally, they behave like officials and do not create a friendly atmosphere around them in which confidence finds an easy growth, and persuasion, to follow the indicated path, never falls flat.

(c) Much of the difficulty is the result of the extreme poverty of the cultivators who cannot afford to risk money in costly suggestions or what appears to them experimental measures.

(d) The smallness and scatteredness of agricultural holdings is also an argument against intensive cultivation. For it is not profitable to have machinery or other improved implements when the holdings are tiny and lie scattered in still smaller patches of land.

(e) Sometimes the absence of proper irrigation facilities becomes so important that intensive cultivation cannot be depended upon to increase output. For in such a case, if the monsoons happen to be unfavourable, the application of increased labour and capital may go to waste. The risk becomes so large that cultivators do not think it worth their while to undertake it.

(f) Even if cultivators are able to produce increased output through intensive cultivation, the difficulties of adequate finance and proper marketing often prevent them from taking advantage of this capacity.

TEST QUESTIONS

1. Define land. What are its characteristics?
2. "Land is permanent. It does not wear out." Judge the validity of this statement by taking different examples of land and testing whether they are permanent or not.
3. What is the role which land plays in the act of production? Can production be carried on without the aid of land?
4. What do you mean by the efficiency of land and how is it measured? On what factors does it depend?
5. What do you mean by extensive and intensive cultivation? Explain fully.
6. What type of cultivation is being followed in India at the present moment? What are the reasons leading to the progress of intensive cultivation and what are the hindrances, if any, to such a development?

EXAMINATION QUESTIONS

U. P. Board

1. Extensive and intensive cultivation go side by side in a country. Explain. (I. A., 1945)
2. Explain the meaning of the term *Land* in Economics. How does land differ from the other factors of production? (I. A., 1942)
3. In what respect is 'land' fundamentally different from the other factors of production? How does this affect the law of supply in production? (I. A., 1930, 1939)
4. Explain clearly what is meant by 'extensive' and 'intensive' cultivation. To what extent has the latter been resorted in U. P., and what are its possibilities? (I. A., 1933)
5. Describe carefully the term 'Extensive' and 'Intensive' cultivation. To what extent is the latter process of cultivation being carried out in India? What are the chief difficulties to be met within its adoption in India? (I. A., 1929)
6. State what is meant by the term "Land" in Economics. To make your meaning clear, give example (I. A., 1928)
7. What are the main characteristics of land which affect production? State and explain them. (I. Com., 1945)

Rajputana Board

1. What are the advantages and drawbacks of small-scale farming? Why are small farms better suited to India? (I. Com., 1945)

CHAPTER 28

NATURE'S GIFTS TO INDIA : PHYSICAL ENVIRONMENT

Poverty in England or America or Germany is a question of distribution of wealth. In India it is a question of its production —Lovesday.

We shall now make survey of the natural resources of our country. Nature has, indeed, been very bountiful in her gifts to India. This country has briskly varying climate and different types of soil so that almost all the agricultural stuffs are produced within her borders. Her mineral resources are equally enormous. She abounds in iron, coal and copper while other minerals and metals are also procurable in varying quantities. Indian forests provide considerable timber and other minor products. Her fisheries, though still not much developed, are capable of enormous exploitation. India is indeed one of the three countries of the world, the others being U. S. A. and Russia, which can build up a self-sufficient economy. It is mainly due to the plentifullness of land or gifts of Nature in India, and the consequent material richness based thereon that she is often called "the fairest jewel in the crown of the British Empire."

The gifts which Nature has bestowed upon India are so important in the economic life of the country that a special study must be made of them. We may begin with a short account of the physical environment, to be followed by forest and mineral wealth, agricultural wealth, and irrigation and power resources. The physical environment of India can be studied under four headings :

1. The Geographical Limits and Location.
2. The Geological Structure (Soil.)
3. The Climate.
4. The Flora and the Fauna.

§ 1. THE GEOGRAPHICAL LIMITS AND POSITION OF INDIA

India extends from 8° latitude to 37° latitude north of the equator. In size it is roughly 18,00,000 square miles. It is equal to Europe *minus* Russia in area and is fifteen times as large as the United Kingdom. Of this total area approximately 60 per cent is under the British rule and the remaining 40 per cent is made up of Indian States.

The boundary of the country is very definite. Its northern boundary is constituted by the mighty Himalayas which have the distinction of being the highest mountains in the world and which remain clad with snow for the most part of the year. Mountains also extend on the north-eastern and north-western sides of the country. These mountain ranges do not allow the movement of men and material from outside to India or from India to outside except through a few small passes. Just as the northern side of the country is protected by mountain ranges, similarly the western, eastern and southern sides are surrounded by water. On the eastern side is the Bay of Bengal; and on the western, the Arabian Sea; while to the South flows the mighty Indian Ocean. The coastline measures about 6,300 miles. It is not broken, and is, more or less straight. There are few navigable estuaries and good ports. Calcutta, Madras, Bombay and Karachi are the only ports of any consequence. What wonder, then, if Indians are not sea-minded and do not turn out good sailors? But this pitiable state of affairs is making our countrymen realise the necessity of develop-

ing themselves into a seafaring nation ; while the past history of the country, when she was one of the leading maritime nations of the world, has kindled in them the desire to achieve the past glory.

The geographical position of India is very favourable for international trade, placed as she is in the very centre of the eastern hemisphere. She has, indeed, splendid commercial relations with the rest of the world. In exploiting this advantage of location at the present moment, she is much handicapped by the absence of her own mercantile marine. If this obstacle is removed in course of time, as the recent trend of events holds promise for, India is sure to emerge as a leading commercial country of the world.

§ 2. THE GEOLOGICAL STRUCTURE OF INDIA (SOIL)

The geological history of this country provides an interesting reading. About a thousand years ago India was not exactly what she is today. She was connected with Africa by land and the sea covered the areas now called Rajputana and the Punjab. As time rolled on, severe volcanic eruptions and other geological changes took place which gave to India her present geological shape.

Soils of India

In the geology of a country, nothing is so important as composition of its soils. Soils play a fundamental and dominating role in the economy of our country, which is preponderingly agricultural. The success or failure of agriculture depends upon the suitability or otherwise of the soil. India is fortunately gifted with rich soils. It is on the whole dry and yields good produce only if adequate water is available either through natural rainfall or through artificial irrigation.

The soils of India can be divided into the following classes :

- (1) The Alluvial Soil.
- (2) The Trap Soil.
- (3) The Black Cotton Soil ; and
- (4) The Crystalline Soil.

(1) *The Alluvial Soil.* The most extensive and agriculturally the most important soil of the country is the alluvial soil. Its composition and characteristics are not fixed ; on the contrary, they show noteworthy diversity. In the northern parts of the country, the soil is porous and dry ; in Bengal it becomes compact and moist ; while in Peninsular India it is very compact and wet—it is in fact clayey and dark in colour. It spreads over the Punjab, United Provinces, Rajputana, Bengal, Assam, Gujarat and Sind. It is also found in some parts of Madras and of Peninsular India as well. The alluvial soil contains plenty of phosphoric acid, potash, lime and magnesia and can very well bear rabi and kharif crops.

(2) *The Trap Soil.* The next important variety of soil is the trap soil. When the trap soil is found on the uplands and the slopes of the hills, it is usually porous and light and yields poor crops. In the lowlands, however, it is thicker and drier and is capable of yielding heavy produce. It is found in the whole of the Deccan and the considerable parts of Central Provinces, Kathiawar and Hyderabad. It can grow cotton, wheat, millets and pulses very well.

(3) *The Black Cotton Soil.* The black cotton soil covers considerable parts of Southern India. Bombay, Berar, Hyderabad, Central Provinces and Central India are the chief tracts where it is found. This soil is black in colour and is best suited to the growth of cotton ; hence the name, the black cotton soil. This soil is very compact

and clayey. It can retain ample moisture, it is also very rich in chemicals and is supremely fertile. Besides being extremely fit for the growth of cotton, it is also capable of producing wheat and millets. Generally, rabi crops grow very well in it.

(4) *The Crystalline Soil.* The remaining parts of the country have crystalline soil, Central Provinces, Orissa, Chhot Nagpur, Sonthal, Bengal and U. P. are the most important parts of the country where it is found. It differs widely in physical and chemical properties. On the uplands it is usually infertile, but in lowlands, where it becomes brownish loam, it is fairly fertile and produces various crops of which rice is the most important.

Soil Erosion

The chief problems connected with soil are those of soil erosion and soil exhaustion. The removal of the fine particles of soil by rainwater or wind is called soil erosion. Soil erosion is chiefly caused by rainfall. If the rainfall is heavy, it washes away the upper particles of the soil which are soft, loose and productive. It, therefore, does considerable damage to the productivity of the soil. This type of erosion is known as sheet erosion. When the rain falls in turrets, the water runs off into streams and cuts deep into the land and creates deep pits called ravines. Soil, thus, becomes practically unfit for cultivation. Such erosion is known as gully erosion.

Soil erosion has done much damage in India. Erosion caused by torrential rains of the Jumna and the Chambal, vast tracts have been rendered unfit for cultivation by this evil factor. This problem has long been neglected in this country, but it has now begun to attract attention. Some measures have also been adopted to check it.

Soil Exhaustion

Another soil problem in our country is that of soil exhaustion. The loss of fertility by the soil due to overcropping is known as soil exhaustion. It is caused by the raising of heavy crops one after the other without allowing it any rest of applying fertilizers and manures. This is an important reason why the yield per acre is very low in India and compares unfavourably with that of other countries of the world. Rightly the Indian cultivators find that the soil is not as fertile today as it was in the past. Increasing population and continued peace have permitted land no rest, and fertility exhausted by continued cultivation has not been restored to the soil by the use of rich manures. This problem is causing anxiety to the thinkers and agricultural experts of our country, though practically nothing has been done to remove this shortcoming.¹

§ 3. CLIMATE OF INDIA

After studying the geographical location and geological structure of our country, we come to the study of her climate. If you look to a map of India, you will find that she extends from 8° to 37° north of the equator. The Tropic of Cancer cuts it into two parts, viz., the Northern India and the Peninsular India. The Northern India has temperate climate. The rigour of cold and heat and the humidity of the atmosphere vary from province to province. As a general rule, the northern and western parts have rigorous climate conditions; and as we move eastwards, they tend to become

¹For the controversy whether the fertility of Indian soil has deteriorated or not, the reader is referred to K. L. Datta, *Report on High Prices*.

moderate. Thus the North-West Frontier Province and the Punjab are very cold in winter season and very hot in the summer season ; but as we move towards Bengal and Assam, winter tends to become mild and summers moderately warm. Similarly Sind, Rajputana and the Punjab have dry climate but in Assam and Bengal the atmosphere is moist. The mountainous and hilly tracts in the Northern India enjoy cold winters and refreshing and delightfully cool summers.

The Peninsular India falls in the equatorial zone. It generally remains hot throughout the year ; the difference in temperature during the winter and the summer months is very small. The coastal regions, of course, enjoy equable climate.

Effects of Climate on the Economy of the Country

The climate of a country plays an important role in determining the character of its economic life. In Book I we had the occasion to show the relationship between economic and geographic conditions, which finds best illustration in the effects of climate on the economy of a country. We shall discuss this subject below with special reference to India :

(1) The occupation of the people are determined by climate. In our country the available moisture and heat make her best fitted for agriculture. This is an important reason why India is predominately agricultural.

(2) The diversity of climates causes a diversity in vegetable, mineral and animal products and makes life rich, varied and delightful. In India, for instance, grow all the vegetable products, from the wheat of the Punjab to the rice of Bengal and the coconuts of the coastal areas. We also possess the various minerals, from the salt range of the Punjab to the coal and iron fields of Bengal, Behar and Orissa and the gold fields of Mysore. All sorts of animals are also to be seen here, from the Kashmir hill-sheep to the Sind camel and Bengal tiger. Such diversity of climate has fitted India pre-eminently for economic self-sufficiency.

(3) Climate also determines the efficiency of the people, since it influences their physical constitution and working capacity. In colder climates people tend to become sturdy, healthy and painstaking, while the hotter climates tend to make them weak and dull. For instance, a Bengali who lives in hot and moist climate is weaker than a Nepali who lives in cold climate.

(4) Climate affects not only the body but also the mind. People living in hot climates cannot do very hard brain work, at least not for long periods, as compared to those living in cold climates. It is maintained by experts that a temperature of 60° F is ideal for manual work and that of 30° F for mental work.

(5) Climate also determines the dress of the people. In cold regions people wear woollen and tight clothes, while in hot regions loose cotton or silk clothes are generally put on. This factor has repercussions on the standard of living and efficiency of the people.

(6) Climate also affects the nature of shelter and building and the planning of cities and roads. In the warmer tracts of our country, a courtyard or *angan* is considered to be an absolute necessity in the house, but it loses much of its importance in cold climates. Climate also determines the type of colours which are preferred. In hot climate, where plenty of sunshine is available, bright colours are liked most, but in cold and cloudy tracts, light and plain colours are usually in fashion.

It is apparent from the above that the influence of climate on the economic conditions of a country is very fundamental. There is indeed much truth in the suggestion that the civilisation itself is a product of climate.

§ 4. THE RAINFALL

Rainfall is one of the two important factors which go to determine the climate of a country, the other being temperature. The rainfall in India is brought about by the monsoons. It is concentrated in a few months, mainly July, August and September. It is not evenly spread and is uncertain in points of quantity and time. Sometimes it falls in torrents and at others it is entirely absent; while periodic fluctuations are frequently noticeable.

Most of the rainfall in this country occurs during the summer months when the sun is north of equator. Due to the position of the sun, air lying over the landmass of India becomes hot and light and rises up. At the time, the pressure of air in the southern oceans increases because the sun is far distant from it. Since air flows from a region of high pressure to the region of low pressure, a wind sets in from southern oceans towards the landmass of India. It travels thousands of miles over the sea and absorbs enormous quantity of moisture in the way. When it strikes against the mountains, it gives off its moisture which comes down in the form of rains. As this wind blows in summer, it is known as the summer monsoon. It has two branches: the Arabian Sea branch and the Bay of Bengal branch.

The Arabian Sea Branch. The Arabian Sea branch of the monsoon comes rushing up from south-west and strikes against the Western Ghats where the rainfall is heavy. It also ascends upwards and causes rainfall in other parts of the country. On an average it gives about 100 inches of rainfall. This rain falls in June, July, August and September.

The Bay of Bengal Branch. The Bay of Bengal branch of the summer monsoon rises laden with moisture and faces the eastern range of mountains causing heavy rainfall there. The rainfall at Cherrapunji is the highest,

being 480 inches on an average; it was more than 800 inches in 1861. This monsoon also rises upwards till it is obstructed by the mighty Himalayas and gives rain to the most fertile and the most densely populated part of the country, *viz.*, the Ganges Valley.

The Arabian Sea branch and the Bay of Bengal branch of the summer monsoon give 90 per cent of the total yearly rainfall to the country. Their importance to the prosperity of India can, therefore, be easily appreciated.

Some of the rainfall is also caused during the winter by what is known as the winter monsoon. The summer monsoon, as we have seen, blows till September. After the equator. Consequently

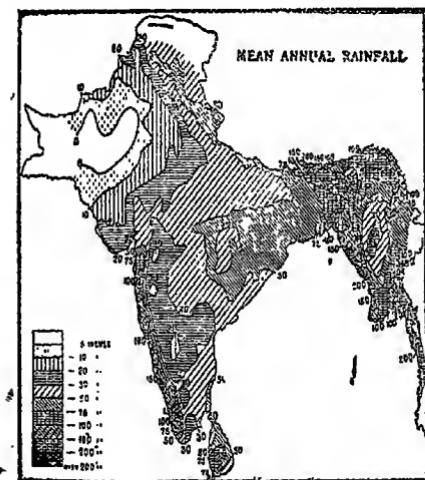


Fig. 29. Showing the Rainfall.

September, the sun tends to move to the south of

there is a rise in the atmospheric pressure in the Northern India; and a corresponding decline in the atmospheric pressure in the Southern India. As a result of this change, the Bengal branch of the summer monsoons fails to penetrate into the high pressure regions and takes its turn towards the south. It blows along the western coast and strikes against the southern end of the Peninsula, thus giving rain to the districts north and south of Madras.

§ 5. THE FLORA AND THE FAUNA

The geographical, geological, and climatic conditions determine the vegetable and animal life (the flora and the fauna) of a country. In India these conditions are so briskly varying that her vegetable and animal life is extremely rich. In India we find the tropical products like rice, coffee, sugarcane, jute and bananas; the sub-tropical products like cotton, tobacco, opium and tea; and the temperate products like wheat, maize, barley and potatoes.

The animals found in the country are of numerous species. The bullocks and the buffaloes are the most important of these and are employed for ploughing the fields, for carrying loads and for drawing water. The cows and she-buffaloes are not less important since they provide milk and *ghee* which are largely consumed in the country. Then there are animals like the sheep, the goat, the donkey and the camel which have their respective spheres of usefulness.

§ 6. GEOGRAPHICAL DIVISIONS OF INDIA

From the geographical point of view, India can be divided into the following four broad divisions:

- (1) The Himalayan Region;
- (2) The Indo-Gangetic Plain;
- (3) The Deccan Plateau; and
- (4) The Coastal Strips.

The Himalayan Region

The Himalayan Region comprises the northern mountainous tracts of the country. On the north-west of this region spread the Hindukush and Sulaiman mountains and on the south-east, the mighty Himalayas. The south-east mountains are crossed by several passes of which the Khyber, Gumal and Bolan are important. These passes are important trade routes.

The Himalayas are the chief point of attraction of this geographical division. They have the reputation of being the loftiest mountains in the world, and play an important part in determining the economic conditions of the country, as they regulate the rains, the winds, the heat, the cold and the moisture and through them the supply of foodstuffs and raw materials. Their chief advantages are the following:

(1) They stop the monsoons which rush northwards from the Bay of Bengal and Arabian Sea and thus cause rain which is the life-blood of Indian agriculture. If the moisture does not fall as rain, it gets frozen into snow and then descends in glaciers, feeding the rivers throughout the year.

(2) Moreover, they stop the cold winds coming from the Tibetan tableland from entering into India and thus save her from a calamity which might have otherwise made this country a dreary land.

(3) From the Himalayas flow the most important rivers of the country, the Indus, the Ganges and others, which are perennially fed by the snow-clad mountains. Much of the agricultural importance of India depends upon these rivers.

(4) In the lap of Himalayas are also found a large number of water-falls which can be harnessed for the generation of electric power and the industrial development of the country.

(5) The forests covering the southern slopes of the Himalayas retain much of the rain-water among the network of their roots and their floor of dead leaves, by preventing too rapid a surface flow. Throughout the dry season, this water slowly trickles down and saves our rivers from absolutely drying up. The Himalayas, therefore, store and regulate the supply of water to the plains in an equable flow all the year round.²

(6) The Himalayas are responsible in various ways for giving to the country the brisk variety of climates which leads to the growth of almost all the cereals, fibres and beverages.

(7) The Himalayas are so definitely invulnerable that they protect India from a northern invasion, thus guaranteeing peace and law and order, which are so important for economic progress.

(8) Finally, they provide healthy summer resorts, and beautiful scenery which are valuable national assets.

The Himalayan region is not economically much developed. This is primarily due to the absence of adequate and efficient means of transport and communication. On the whole the region is self-sufficient, producing as it does almost all of its requirements except salt and petroleum.

There are a number of valleys in this region which are situated in rain-shadow areas and where agriculture is successfully carried on. In the eastern part water is plentiful and citrus fruits like, lemons and oranges are grown. The western part, on the other hand, is dry and here deciduous fruits like chestnut and apple are grown.

This region is very rich in forests. The most important trees found here are the pine, oak and sal. However, these forests remain largely unexploited because they are situated in the regions which cannot be easily reached, the means of transport and communication being very poor. At present they are exploited only for their products like *kaththa* and turpentine.

The Himalayan region consists of valuable pasture land where sheep and goats graze and produce abundant wool. Some minerals, including gold, are also found here.

The Indo-Gangetic Plain

The second geographical division of India is the Indo-Gangetic Plain. This stretches from the Vindhya in the south to the northern mountain ranges. It consists of very large plains, traversed by several rivers, which enrich it by the fertile alluvial soil washed down by them. A group of five rivers with Indus as the principal river, gives to the Punjab its name. Another group of several large rivers including the Ganges and the Jumna pass through the U. P., Bihar and Bengal. The most important rivers of the region are the Indus and the Ganges, and, therefore, it is called the Indo-Gangetic Plain.

These rivers are economically very important: (1) They have covered the entire land with soft, deep and fertile alluvial soil. Thus they have given to this region the enviable fertility for which it is known throughout the world. (2) These rivers are

²Sinker, *Economies of British India*.

the perennial source of water and have provided marvellous irrigation facilities. (3) They also shift their bed from time to time and have created an undulating tableland. They are generally called "the land-makers". (4) Finally, they are navigable to certain extent and have made some contribution to the removal of the economic isolation of this region.

Thus these rivers are economically very advantageous. But they are not large and deep and do not allow big steamers to ply throughout or through a large part of their course. And as their course is rapidly changing, trade centres do not develop on their banks.

On account of its large rivers and fertile soil this plain became the home of Aryan civilisation and the birth-place of religious and empires; and is today reckoned as one of the most important agricultural regions in the world. All kinds of cereals, like wheat and rice, of raw materials like cotton and jute, of beverages like tea and coffee, grow here. It is also rapidly becoming an industrial region. Abundant raw material, cheap and plentiful labour and extensive markets for the products, are valuable assets for the industrial growth.

The Deccan Plateau

To the South of the Vindhya is situated the Deccan Plateau which looks like a triangle. The Vindhya range is its base, the Cape Comorin is its apex and the Eastern and Western Ghats are its sides. This tract is a tableland and has an average height of about 1,500 feet. This is indeed the oldest part of the country. It consists of many valleys through which several rivers flow. The Mahanadi, the Godavari, the Krishna and the Kaveri flow towards the East and the Narvada and the Tapti towards the West. These rivers are not good for navigation since they are very rapid; have several falls and rocky beds.²

In this region large varieties of soil exist, from the fertile and moist black cotton soil to the dry and barren deserts. The rainfall is little and uncertain and the entire region is subject to famines. The plateau is well-known for its forests, cocoa-nut palms and cinchona trees. Sugarcane, oil-seeds, millets and tobacco grow fairly well in the entire region. Madras grows rice and the southern parts tea and coffee. Coffee is, however, the most valuable crop.

The Coastal Strips

Besides these three important parts of the country there are coastal fringes along the eastern and western coasts. The coastal strip lying between the Bay of Bengal and the Deccan Plateau is known as the East Coast or the Karomandal Coast. The strip lying between the Arabian Sea and the Deccan Plateau is known as the Western Coast or the Malabar Coast. The Karomandal Coast is more extensive than the Malabar Coast. These coastal strips possess alluvial soil and are very fertile. They do not have any mountains or rocks.

The western coast is known for cocoa-nut trees, cotton and spices like pepper and cardimoms. The celebrated Broach Cotton which is the best in India grows in this region. The most important crop on the Eastern Coast is the rice. Cotton and sugarcane are also grown while groundnut and jute are becoming rapidly popular. Hydro-electricity is being generated on an increasing scale and efforts are being made to develop the various industries as well.

²The Deccan rivers, like most rivers in plateau regions, flow in deep gorges, and are, therefore, of little value for either irrigation or communication and it will be seen that there is no town of any size or importance on any of the Deccan rivers.—Thurston, *Economic Geography*.

TEST QUESTIONS

1. Describe the geographical limits and location of India.
2. Write an essay on the "Soils of India".
3. Explain the climate of India and describe her flora and fauna.
4. How is rainfall caused in India? What are its characteristics?
5. Describe the geographical divisions of India.
6. What is the economic significance of the Himalayas?
7. What are the advantages and shortcomings of the Indus and the Ganges systems of rivers?

EXAMINATION QUESTIONS

U. P. Board

1. Describe the characteristic soil and climatic conditions of the United Provinces. How do these affect the economy of the province. (I. A., 1929)
2. Give an account of the soils and climate of India and explain their effects on the economy of the country. (I. A., 1938)

Rajasthan Board

1. What are monsoons? How do they arise? Explain the economic effects of the monsoons in India (I. A., 1935)
2. Explain fully the ways in which monsoons affect the economic well-being of the people of India. (I. A., 1937)

Other Examining Bodies

1. Discuss the relation between the economic and geographical conditions of a country. (Delhi I. A., 1937)
2. Write an essay on the soils of India. (B. H. U. I. A., 1938, 1931)

1. Forests the preservation of which is essential for climatic and physical reasons.
2. Forests which afford a supply of valuable timbers for commercial purposes.
3. Minor forests containing inferior kinds of timber and managed for the production of wood, fodder, grazing and other produce for local consumption.
4. Pasture lands which are not forests as such, but only grazing grounds.

Steps have been taken by our Government to save the forests from the evil of indiscriminate and reckless cutting, and to improve their yielding capacity. These attempts have been fairly successful.

Backwardness of our Forest Industry

The forest industry of our country is very backward. This can be well appreciated from the fact that the Government revenue from Indian forests is only Rs. 5 crores per annum while in Germany, which has a much smaller forest area, it is almost 9 times as much.

The causes of backwardness are several. Consumers in general, are not aware of the value, properties and utilities of timbers of all kinds. The Government have so far paid attention to the preservation of forests rather than to their proper exploitation. Much of the backwardness must be attributed to the poverty of the means of transport and communication : tramways and roadways are little developed. Moreover, the system of sylviculture is backward and afforestation is fairly absent. The complaint is often made that the forest service is poorly staffed and the commercial side is generally overlooked.

All these defects must be removed if our forest industry is to achieve the proud place it deserves. Through the development of means of communication, introduction of scientific sylviculture and afforestation, and improvement in the forest service, much can be done. The Royal Commission on Agriculture recommended the appointment of Forest Utilization Officers in the various provinces, who should be entrusted with the duty of proper utilization of forests.

A closer contact between the Forest and Agricultural Departments was also recommended. It was suggested that forests should be classified into major and minor divisions, the former consisting of the commercial forests and the latter of fuel wood and pastures which should be transferred to the control of the village panchayats. Agricultural colleges, it was hinted, should institute courses in forestry for the training of new officers.

§ 2. MINERAL WEALTH

Of equally great, or perhaps of greater, economic importance are the mineral resources of a country, which are entering more and more into the modern mechanism of industry and even the domestic lives of the people. The modern industrial progress is fundamentally based on machinery and power which are produced from iron and coal respectively, the two most important minerals. Our country is quite rich in various minerals. Minerals are associated with old rocks. Naturally, therefore, the Peninsular India, which has the oldest rocks in the country, abounds in them ; while the Northern India, which is fairly young, is poor in this respect.

Coal

Coal is the most important mineral in this country. The annual output of coal is about 20 million tons. It is, of course, nothing in comparison to the output of

Great Britain, which comes to 500 million tons per annum ; but excluding Great Britain, India is the largest producer of coal in the British Empire.

Indian coal comes almost entirely from the system of rocks known as the Gondwana System. It extends over the Peninsular India including Bengal and Bihar. Jharia is the most important coal area, producing, as it does, 50 per cent of the entire coal output of the country, Raniganj coal-field comes next in importance, adding another 25 per cent of coal. Then there are various minor coal-fields in Central Provinces and Hyderabad. There is also the Tertiary System of rocks which produces 2 per cent of the total output of coal which is found at its two extremities, *viz.*, Bengal and the Punjab.

Coal mining industry of India is not much developed and has to face a large number of obstacles. India has a hot climate which does not favour underground work ; labour is not very efficient ; while coal cutting machinery is in little use. Moreover, most of the coal is concentrated in Bengal and Bihar and has to be transported over long distances before it reaches the centres of consumption, which increases the cost. It, therefore, finds difficult to compete with the South African and Australian coal which finds its way in Indian markets. Indian coal mining industry can develop if railways consent to reduce freight on the carriage of coal. As most of the Indian coal is soft, the popularity of soft coke in Indian homes can be depended upon to improve this industry.



COAL DISTRIBUTION

fig. 81.

as rich in contents as Nature can provide. Orissa is the largest producer of iron ore. The district of Singhbhum and the states of Mayurbhanj, Bonai and Keonjhar are well known for iron ore. In Orissa the ore need not be dug out ; it has simply to be collected from the surface. The next important province for iron ore is the Central Provinces, where the districts of Balghat, Durg and Chanda are noteworthy. Ore is also found in Mysore.

Indian ore acquires special importance due to the fact that the Indian deposits are the only easily accessible rich ores in the whole of Asia. Iron ore cannot be economically exported in the raw state ; and is, therefore, turned into pig iron which is exported. We have been preparing pig iron at a competitive price. We are the principal suppliers of pig iron to Japan ; while we have caused alarm to America and United Kingdom by under-selling them in their own markets.

Petroleum

Petroleum shares with coal the honour of supplying power to various industries. India is very poor in petrol. It is found only at its two extremities, *viz.*, Burma and the North-West Frontier Province. Burma is now separated from India and the only

eastern supplier is Assam where some oil is produced from Shale in Digboi. In the N.-W. F. P., petroleum is found near Rawalpindi. These deposits have been worked for a very long period and have now become exhausted. Oil refining is only imperfectly carried on in India and all the by-products are not obtained in the process.

Manganese

Manganese is used for the manufacture of high-speed steels. India was at a time the most important producer of manganese; but since the inauguration of the Five Years' Plans in Russia, she has been outstripped by that country. Manganese is produced in India chiefly in C. P., Balghat and Nagpur being specially important for it. Bombay also produces manganese near Ratnagiri. Formerly, we used to export manganese to the United States in large quantities, but now she draws her supplies from U. S. S. R. Our exports now go to the United Kingdom and France.

Mica

Mica is a non-conductor of heat and electricity and, is, therefore, utilized in the manufacture of electric materials. India is the largest producer of mica in the whole of the world. It is found chiefly in Bihar. Some blue mica is also produced in Travancore.

Gold

India produces about 5 per cent of the world's output of gold. Almost the entire supply comes from the Kolar gold mines of Mysore. They have been worked for a very long time; and the metal has now to be mined from great depths. The output, however, is small.

TEST QUESTIONS

1. What are the forest resources of India? Discuss the types of Indian forests.
2. Show the economic importance of forests. What is the object of forest administration?
3. Is Indian forest industry backward? If so, why? Can you suggest measures for the improvement of this industry?
4. Write an essay on the "Mineral Resources of India."

EXAMINATION QUESTIONS

U. P. Board

1. "The natural resources of India are very great. What is required is their proper conservation, development and use." Explain this statement, particularly with reference to water power, forests and minerals. (I. A., 1940)

Rajputana Board

1. What is the importance of forests in the national economy of this country? Describe the policy pursued by the Government to develop forests. (I. A., 1939)
2. Describe the distribution of raw materials in the different parts of India and state their importance in the development of our industries. (I. A., 1932)

Other Examining Bodies

1. What are the factors that lead to the economic prosperity of a country and how far are they found in India? (Delhi, I. A., 1928)
2. Discuss the mineral resources of India, with special reference to coal and iron. (B. H. U., I. A., 1938)
3. Discuss how far the mineral resources of India are adequate for the industrialization of the country. (B. H. U.; I. A., 1931).

CHAPTER 30

THE AGRICULTURAL WEALTH OF INDIA

In quite physiocratic fashion the mass of Indian people attribute to the soil almost exclusive productive capacity, and other industries appear to them as more or less parasitical. This is but natural in a social economy in which agriculture predominates and the deep attachment of the people to the soil is thus easily accounted for.—*V. G. Kals*

The geographical conditions have made India one of the most important agricultural countries of the world. India is mostly agricultural, three out of every four men being dependent upon agriculture for their livelihood. Every year, approximately 250 million acres of land is cultivated. The value of the total agricultural produce comes to nearly 1,000 crores of rupees. The crops grown in India can be conveniently divided into :

- (1) Food crops, like wheat, rice, millets and pulses ; and
- (2) Non food crops, including beverages like tea and coffee ; and raw materials like cotton and jute.

Food crops are, however, much more important than non-food crops. About 80 per cent of the total cultivated area (200 million acres) is given to the former and the remaining 20 per cent (50 million acres) to the latter.

From the point of view of seasonal growth, crops may be divided into *rabi* and *kharif*. The *kharif* crop requires plenty of water and is sown in the beginning of the rainy season. It is ready in September, October and November. *Rabi* crop does not require much water, is sown in October and November, and is ready in March and April.

§ 1. FOOD CROPS

Indian agriculture, as said above, is mainly concerned with the production of various food crops. Rice and wheat are the most important of these crops and are followed by barley, maize, millets and pulses. Fruits and vegetables are making slow but steady progress while sugarcane has carved out for itself an important position

Rice

Rice occupies the biggest total area, about 72 million acres in a good year, with an annual yield of about 425 million tons. Over a great part of India rice is the principal food crop, but even with the comparatively large production of rice in India, there is annually a big import from Burma, an import which may go up to 2,000,000 tons a year, to supplement the internal supply.

Rice requires abundant heat and moisture for its growth. It is, as such, mostly grown in the damp and hot parts of the country, as is shown in the adjoining map. Bengal, Bihar and Orissa are the most important rice growing tracts, U. P. and Madras also grow rice.

Rice is grown in different soils and under different climatic conditions in this country with the result that its varieties are numerous. Compared with the average yield of some other rice-growing countries, the Indian average appears to be small. Recently the importance of proper research in rice has been realised and a scheme of rice research finance by the Imperial Council of Agricultural Research and the Empire Marketing Board has been instituted.

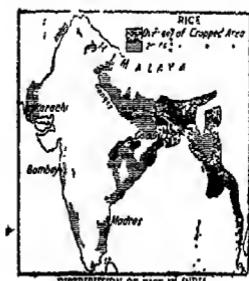


Fig. 32.

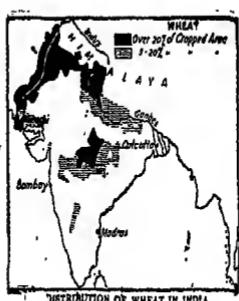


Fig. 93

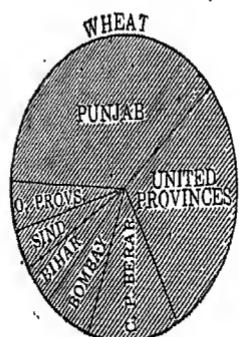


Fig. 94. Provincial distribution.

are high. Almost all the countries of the world have now begun to produce this important cereal on scientific lines and many of them under-sell India. Wheat production in India was even threatened by foreign imports of wheat and could be saved only through protection. The output of wheat has, however, increased in recent times as a result of the completion of the Sukkur Barrage and other similar projects.

Barley

Barley, like wheat, is a winter crop and is grown along with it. It is a cheap grain and is largely consumed by the poor. It is, therefore, grown very extensively and is to be seen almost everywhere. U.P., Bihar and Orissa are, however, the important barley regions. Barley is not much exported.

Maize

Maize or *Makka* is grown in warm and wet climate, just like rice. It is chiefly grown in Northern India, particularly in U.P., Bihar and Orissa. It is used as a food grain and is consumed locally.

Millets

Millets constitute an important group of crops in the country and consists of several varieties. They are consumed by the poor people and the cattle.

Wheat

The second cereal in order of importance in Indian agriculture is wheat, of which there is annually a total of about 35,000,000 acres and a total output of from 9,500,000 to 10,000,000 tons. Unlike rice, wheat requires little moisture and cold climate. As such, it is grown in India as a winter crop when these conditions are available. As appears in the adjoining map, the Punjab and the United Provinces are the most important wheat-producing regions in India. They contribute together no less than 75 per cent of the total output of the country. C. P. and Berar are also noted for wheat.

The quality of Indian wheat, however, is poor. It deteriorates further as a result of defective threshing which causes other grains and rubbish to mix with wheat. Efforts are being made to improve the quality. Experiments are being carried out in the various agricultural colleges and at the Imperial Research Institute with this object in view. The Government have appointed a standing committee to deal with the various wheat problems. Improved varieties of wheat are now grown and cover about 7 million acres of land. Success has also been achieved in grading of wheat, and Pusa 8, Lyallpur 5, and Cawnpore 4 have become very popular.

Since the opening of the Suez Canal, India has been exporting wheat to other countries of the world, but in recent years the exports have been very nominal. In fact, wheat export from India has been in a very fluctuating quantity and is noticeable only when world prices for this commodity

The most important millets are the *joar* (Sorghum) and *bajra* or *kambu* (the Bulturch millet). *Joar* requires more fertile-soil than *bajra*. Their production follows the quality of soil. As these grains are very cheap, they are grown carelessly, often without manuring. Bombay, Madras and U. P. are the chief regions of production. Punjab grows *bajra* but not *joar*. On the other hand, *joar* grows well in C. P. where *bajra* is not to be seen.

Another millet, which is chiefly grown in the South (in Mysore, Hyderabad and Madras) is the finger-millet or *ragi*. It requires irrigation and is a dear crop. The poor look upon it as a luxury.

Pulses

India has a great range of pulse crops. These pulse crops are important both from the point of view of husbandry and of nutrition. They are an invaluable phase in many rotations, helping to keep up the fertility of the soil, which purpose they also perform when grown (as they often are) as mixed crops particularly with millet, ripening and harvesting first. In the realm of nutrition they are sources of protein particularly necessary in a country where the bulk of the population is vegetarian. They are also important from the point of view of animal nutrition, to which they contribute in a variety of ways, e.g., by their seeds, by their husks and by the green parts of the plant. Their yield is fairly good. The chief varieties of pulses are *arhar* and *chana*; *urd*, *moong* and *masoor* are less important varieties.

Fruits and Vegetables

The cultivation of fruits and vegetables is at present carelessly carried on in the country but the demand for them is increasing and scientific methods of cultivation are slowly becoming popular.

Fruits. India produces a large variety of fruits of which bananas, guavas, pomegranates, jack fruits, melons and cocoanuts are very common. The consumption of fruits in this country is slowly but steadily increasing and some fruits like mangoes have begun to be exported. It is also being widely recognised that fruit culture is a successful remedy against the uneconomic nature of holdings. Helped by these two factors, fruit industry is likely to make an advance in future; but the varieties and the methods of cultivating fruits require considerable improvements. To these ends a good deal of effort is being devoted by agricultural departments and by the Imperial Council of Agricultural Research, the body which is charged with the task of stimulating, co-ordinating and helping to finance agriculture and animal husbandry research throughout India.

Vegetables. The consumption of vegetables in India is very large. Vegetables are grown in all the villages and in the suburbs of cities. They can be transported for sale over short distances but long distance trade in vegetables has not yet made its appearance. Some well-known vegetables of the country are potatoes, cauliflowers, tomatoes, cabbages, brinjals and peas. It is expected that with the development of rapid means of communication and the introduction of cold storage, the cultivation of vegetables, as of fruits, will increase.

Spices

The consumption of spices in India is very large, for Indians have a habit of taking spicy things. Turmeric and chillies are found almost everywhere. Cardamums, pepper and ginger are grown on the Malabar and Travancore coasts.

Sugarcane

India is one of the most important sugarcane growing countries of the world. She is only next to Cuba in this respect.



Fig. 85. Provincial distribution.

Sugarcane is grown in fertile soil and requires high temperature and fairly well distributed heavy rainfall. Artificial irrigation is favourable to its growth. The most important region producing sugarcane in this country is the U. P.; the Punjab, Bihar and Bengal are other important regions.

Since the grant of protection to the Indian sugar industry in 1932 and the consequent rapid advance of the same, the growth of sugarcane has been tremendously stimulated. Not only has the quantity of sugar gone up, but its quality has also been improved. About three-fourth of the total area under sugarcane is now devoted to the improved varieties. The improvement of sugarcane cultivation, the study of its pests and diseases and the investigation of its physiology are being carried out at a chain of research stations throughout India, also at the Imperial Agriculture Research Institute at

New Delhi and its substations, while the technological side is looked after by the Indian Institute of Sugar Technology at Cawnpore.

It is interesting to note that only 15 per cent of the total sugarcane produced in the country is used in the sugar factories. About 20 per cent of the sugarcane is devoted to chewing and other purposes. The remaining 65 per cent is converted into gur which is largely consumed by poor villagers.

§ 2. NON-FOOD CROPS; BEVERAGES AND DRUGS

The important beverages and drugs which grow in this country are tea, coffee, tobacco and opium.

Tea

India is most important tea-producing country of the world. Tea is plucked from a shrub which grows in the sub-tropical climate. It requires heat and moisture for its growth. If some stagnant water accumulates in the soil, it injures the shrub. Hills are, therefore, generally used for the growth of tea. A well drained light soil is ideal. Assam is the most important tea-growing province in India and is responsible for about one half of the total output. Bengal is another important producer. Madras follows the suit, though it is of secondary importance.

The internal consumption of tea is rather little, so that most of the tea produced is available for export. India meets about 40 per cent of the world demand for tea. United Kingdom is our best customer of tea. Of late, keen competition from Java and Sumatra has brought about a crisis in the industry and over-production is common. To meet this problem, the industry has been following a policy of restricting the output associated with a vigorous propaganda in favour of tea consumption with remarkable success.

Coffee

Coffee is another sub-tropical crop. It requires for its growth moderate heat and equable temperature. It is, therefore, ideally grown in Southern India : Mysore, Koorg and Travancore being specially noted for it. India exports coffee in large quantities. It also imports it from Java and Ceylon, much of which is re-exported. Taking imports and re-exports into account, her internal consumption of coffee is very little.

Tobacco

Tobacco is an important item in the consumption of the Indian people and grows luxuriantly in India. It is chiefly produced in Madras Presidency, Bengal, Bihar and Orissa, while Gujarat and Bombay are also noted for it. The harvesting season ranges from December to June ; February, March and April being the common months for the *rabi* crop.

The tobacco produced in the country is largely consumed internally. It is used for smoking *hukka*, while people take it with *pan*. The quality of Indian tobacco is poor. Efforts are being made at the Agricultural Research Institute, Pusa and elsewhere to grow improved varieties of tobacco such as may be used in cigars and cigarettes.

Opium

Opium is obtained from poppy seed. It is a decaying crop. About 30 years back it was in fact the money crop. In 1911 the Government of India concluded an agreement with China by which all exports to China were stopped. This fact, associated with the fall in the consumption internally, has ruined the industry. In British India opium is grown under strict Government control in Bihar and U. P., but its chief growers are the Indian States, particularly Indore, Gwalior and Bhopal.

§ 3. NON-FOOD CROPS : RAW MATERIALS

The important raw materials that are produced in the country are the cotton, jute, oil-seeds and indigo.

Cotton

Among purely commercial crops cotton holds first place with an area of 21 to 25 million acres. India ranks as the second cotton-growing country in the world, the U. S. A. holding the first place. Cotton loves dry areas having brilliant sunshine, irrigation facilities and warmth. In India it is grown chiefly in the black cotton soil which is responsible for 50 per cent of the total Indian produce. Bombay, C. P. and Berar are the most important provinces for cotton. The Punjab, Madras and U. P. are also known for it.

Indian cotton is known as the short-staple cotton. It is, as such, of poor quality and cannot produce fine cloth. Cotton in India is not only poor, but its yield per acre is also low. Efforts are now being made to improve its quality and output per acre. The Agricultural Department and the Indian Central Cotton Committee have done valuable work in this connection. At the instance of the above Committee several Cotton Acts have been passed with a view to check adulteration and improve the marketing facilities.

We are important exporters of cotton. Japan is our largest single customer. The various Indo-Japanese agreements have made provisions for the export of cotton from India to Japan. Lancashire mills are also increasing their consumption of Indian cotton.

Jute

India is the most important jute producer in the world. Jute requires for its growth damp and warm climate and rich, moist soil. The conditions are ideal for its growth in Bengal which is the most important jute-producing region in India. About 90 per cent of the jute crop comes from Bengal and the rest is to be found in the adjacent provinces of Bihar, Orissa and Assam. The crop is an old one in Bengal, but a comparative new comer is Assam, where, however, it tends to increase. India exports raw jute in large quantities to the various countries of the world. Attempts are being made in foreign countries to find substitutes for jute, but with little success. The recent war has given a stimulus to the production of raw jute. Research work on all aspects of these problems is being carried out under the auspices of the Indian Central Jute Committee, whose agricultural research station is at Dacca and its Technological Laboratory in Calcutta.

Silk

Another noteworthy product of India is silk. Silk worms live on the leaves of the mulberry trees. The latter grow in sub-tropical and temperate zones. In India silk is grown in Assam and Bengal and in some mountainous tracts.

Oil-Seeds

Oil-seeds are primarily the export crops, or the "cash crops". They include groundnut, linseed, sesamum and mustard. Oil-seed crops are of a precarious nature and their price is very fluctuating. In spite of these facts, however, oil-seeds are widely grown.

Groundnut. Groundnut was not always grown in India and was introduced probably only some time back. But it now occupies quite an important place in the agricultural economy of the country. Its extension has been rapid and continuous especially since 1924. It is grown in the Southern India, mainly in Madras, Bombay and Hyderabad. The present war has hit the groundnut trade on account of loss of markets and prices have slumped in consequence.

Linseed. Linseed is meant mainly for export. In the beginning of the present century India satisfied the entire world demand for linseed, but severe competition of other countries has contracted its foreign markets. The chief provinces for linseed are Central Provinces, U. P., Bihar and Orissa, though there is a good deal of cultivation scattered over other parts of India. In the Crop Planning Conference held in India in 1934 this was one of the few crops the expansion of which was definitely recommended.

Sesamum. Sesamum grows in Peninsular India. Most of it is consumed locally, only 10 per cent of the total produce being exported.

Rape and Mustard. Rape, mustard and others, which come under the class of cruciferous oil-seeds, are widely grown in Northern India where they form an important group of crops. A large portion of these seeds is crushed locally for home consumption, both in small village installations and also in modern factories.

The Problem of the Exports of Oil-Seeds. The question of the export of oil-seeds is an important problem in Indian Economics. If the Indian oil industry is developed, these seeds can be crushed internally; and we can thus obtain not only the oil but also the residue or the oil-cake which is a valuable manure. At present these seeds are exported and we import in exchange only oil, the manure being lost by us. There is, indeed, a group of Indian economists who definitely advocate the prohibition of the export of oil-seeds.

Indigo

Indigo was a very important crop of the country some time back. It was produced at that time in Madras, Bihar, Orissa, U. P., and the Punjab. The introduction of synthetic (aniline) dyes which are very cheap, has led to the neglect of plantation indigo. Attempts are being made to revive its cultivation, but the future of the industry is very uncertain.

Note.—For special problems of Indian Agriculture, please see Chapter 49, § 1. Examination questions on these topics are given at the end of that chapter.

TEST QUESTIONS

1. What are the important food crops of India? Give detailed notes on the more important ones.
2. Write short notes on wheat, rice, cotton, jute and tea.
3. What are the important non-food crops falling under the group of beverage and drugs? Discuss their growth and disposal.
4. Write a short note on the agricultural raw materials grown in this country.

EXAMINATION QUESTIONS

1. What are the main agricultural products of India? Account for their geographical distribution. (Rajputana, I. A., 1940)
2. Describe the distribution of raw materials in the different parts of India and state their importance in the development of our industries. (Rajputana, I. A., 1932)

CHAPTER 31

IRRIGATION IN INDIA

The main object of irrigation should always be borne in mind; that is, Nature having withheld from plants the moisture necessary to their growth, it becomes necessary to supply the omission. When that object has been attained, the work of the irrigator ends, and to continue farther would be detrimental to the soil, and injurious to plants instead of beneficial.—D. H. Anderson

Adequate supply of water is a primary necessity for the success of agriculture. The importance of satisfactory rainfall in the highly agricultural economy of India can, therefore, be easily appreciated. But the rainfall in India is uncertain in volume, time and place; and cannot support a regular and stable agricultural industry. To remove this shortcoming, artificial irrigation of fields has been practised by the people of the land from very ancient times, and is today a common feature throughout the length and breadth of the country. The importance of irrigation is due to a variety of factors :

(1) Rainfall in India is confined only to three months and is badly distributed, besides being uncertain both with regard to time and place. There are, indeed, some areas of habitually deficient rainfall where cultivation is altogether impossible unless artificial irrigation is resorted to. Sind and Rajputana are good examples. Then, there are areas where rainfall is uncertain and which are, therefore, liable to famines. U. P., C. P., Central India and Madras are so liable, and are known as the 'areas in the famine zone.' In all such tracts, irrigation has to be depended upon to save the people from disastrous famines when rains deceive them.

(2) There are certain crops in the country which require a regular and abundant water supply. Such water requirements are not always provided by Nature and have to be furnished by artificial irrigation. Rice and sugarcane, for instance, grow mainly through artificial irrigation.

(3) Population of the country is fast increasing and the raising of the second or the winter crop has become essential. Winters being rainless in India, artificial irrigation has to be made use of.

These are the various reasons why irrigation has been a factor of enormous economic significance in the country from times immemorial.

Irrigation Works in India

If we draw a line from North to South of India through Allahabad, we will divide the country into the western and eastern parts. Irrigation is important in the western part only and not so much in the eastern part. In the western India wherever water is deficient and big rivers are available, *canals* have been constructed and many more are being projected and completed. But the construction of canals requires a mint of money and a regular supply of water: and where these conditions are not satisfied, *wells* have been constructed. The initial and working expenses of the wells are much less than those of the canals. Where neither canals nor wells can be constructed, reservoirs or *tanks* have been made where water is stored up during the rainy season to be made use of according to necessity. Canals, wells and tanks, then, are the most important irrigation works in India. The total irrigated land of the country comes to less than 60 million acres, i.e., about one-fifth of the total cultivated land of India. Of this, canals irrigate 55%, wells 25%, tanks 10% and other sources 10%.

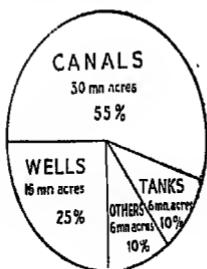


Fig. 97. Showing the relative importance of the various means of irrigation.

IRRIGATION IN INDIA

Well Irrigation in India

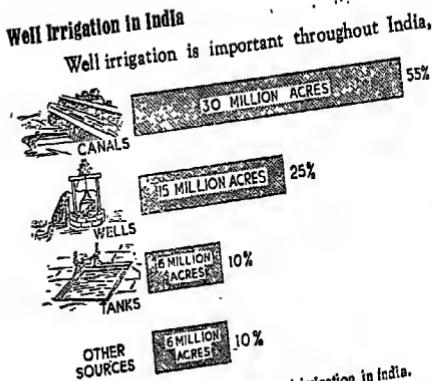


Fig. 38. Showing the means of irrigation in India.

pumps have been installed ; and many new tube-wells have been started in large numbers in U. P. because of active State assistance. Ganges State Tubewell Schemes in U. P. Under this scheme, attempt has been made to utilise underground water in Western U. P. to be utilized for a widespread system of irrigation. "The primary object of the tube-well system is to provide irrigation facilities in the cultivable tracts of those districts traversed by the Ganges hydro-electric grid, which could not be commanded over by canals owing to the limitation of the river water." This Scheme has provided over 1,500 tube-wells irrigating about 7 lakh acres of cultivable land.

Future of Well Irrigation

The future of well irrigation is very bright. The great advantage of wells is their cheapness so that they are within the means of many cultivators. Particularly, the policy of State assistance will surely be found very encouraging. The tube-well system is very efficient and cheap and has a bright future.

§ 1. WELL IRRIGATION

Well irrigation is prevalent throughout the length and breadth of our country. Wells have been constructed wherever favourable conditions exist, i.e., wherever water table is high and the soil is soft. High water table is a distinct advantage since the well need not be deep in that case and the cost of its construction is held in check ; at the same time the labour involved in drawing water need not be enormous. Soft soil allows the well to be dug easily and quickly. The alluvial soil is very good from these points of view ; it can be easily dug and the wells made in it need not be deep. The black cotton soil also possesses the advantage of being compact so that the wells dug in it do not require repairs for long.

Almost ideal conditions for the construction of wells are found in the Indo-Gangetic basin which is the most important well region of the country. The western U. P. in particular, is very well-known for it. The whole area from Benares to Delhi is drilled like a sieve with wells. The black cotton soil area is also an important well region. Bihar and Assam have a fairly large number of wells.

but it is most important in the United Provinces where no less than over 11 lakh wells are in use. Madras is the next important province with 6.5 lakh of wells. Punjab, C. P., Rajputana, Sind and N.W. F. P. follow in order.

Well Irrigation in U. P.

Tube Wells. In recent times irrigation by wells has been greatly encouraged by the tube well system. Many existing wells have been improved by boring tube wells of large capacity in which electric

§ 2. TANK IRRIGATION

In many places in India rain water is stored up in reservoirs or tanks; and is later on distributed over the cultivated areas in the dry season. Tank irrigation has been in existence in the country from very ancient times. Tanks are very common in the Central and Southern India. In those tracts canals cannot be constructed, because the rivers found there are not perennial and become dry in summers; while the numerous hills and rocks make the digging operation difficult, lengthy and costly. Even wells cannot be dug there because the soil is undulating or hard and the water table is low. Fortunately, the hilly and broken nature of the country makes the construction of tanks or reservoirs easy and possible. Many of the old tanks have been out of use for some time past and are being silted up. Efforts should be made to remove the silt, to repair them and to make them fit for irrigation in every possible way.

§ 3. CANAL IRRIGATION

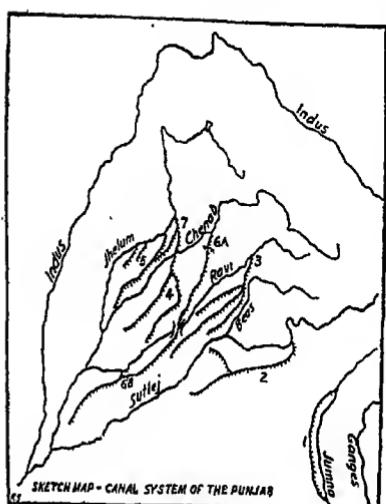
The most important type of irrigation works in the country are the canals. Canal construction requires enormous capital and is beyond the capacity of poor cultivators. The canals are, therefore, constructed and owned by the Government. The British Government were not the first to introduce canal irrigation in India, for there are several ancient canals built by Hindu and Muslim rulers; but British Government certainly laid special emphasis on canal irrigation with the result that India possesses today the most magnificent canal system in the world. The total of the Indian canals is about 75,000 miles which is the largest figure in the world.

Inundation and Perennial Canals. According to their methods of construction, canals can be divided into inundation canals and perennial canals. Inundation canals are drawn directly from the rivers without any dam. They do not get water unless the water level in the river reaches a certain height. They receive water only when the river is flooded and not when the water is comparatively small. The Sind and the Punjab canals are mostly inundation canals. Perennial canals are taken from a river which keeps full of water throughout the year by putting a barrage across it. Water can be diverted from the river to the canal under controlled conditions. Perennial canals may receive plenty of water, even if the water level in the river is very low. The U. P. and the Punjab canals are of this type.

Distribution of Canals

Most of the canals of the country are found in the Punjab and U. P. This is mainly due to the following favourable geographical factors:

(1) The Indus and the Ganges together with their tributaries are snow-fed rivers and remain full of water throughout the year. Thus they ensure a constant supply of water to the canals taken out of them.



Map 39.

which is practised here. In the map (Fig. 39) on page 199 have been shown the various canals of the province.

As is clear from the map, the following are the important canals of the Punjab :

1. The Western Jumna Canal.
2. The Sindh Canal.
3. The Upper Bari Doab Canal.
4. The Lower Chenab Canal.
5. The Lower Jhelum Canal.
- 6A. The Upper Chenab Canal.
- 6B. The Lower Bari Doab Canal.
7. The Upper Jhelum Canal.

} The Triple Project.

6A, 6B and 7, i.e., the Upper Chenab Canal, the Lower Bari Doab Canal and the Upper Jhelum Canal, are known together as the *Triple Project*. It is a brilliant feat of canal engineering skill. The Upper Chenab Canal (6A) takes water from the Chenab just at the foot of the Himalayas. It crosses the Rabi through an aqueduct and continues to flow further under the name of Lower Bari Doab Canal (6B). After the construction of these two canals it was found that very little water was left for the Lower Chenab Canal (4). To feed the latter, the Upper Jhelum Canal (7) was constructed which takes off water from the Jhelum and carries it to the Chenab. This water is poured into the Lower Chenab Canal (4).

Sutlej Valley Works. Recently the Sutlej Valley works have been completed in the Punjab (1932-33). The Government of India and the States of Bikaner and Bhawalpur are the co-partners in this project. Its cost has come to about 21 crores of rupees, out of which 9 crores have been provided by the Government of India. It irrigates five million acres of land, two million of which are situated in British territory.

(2) The rivers in these provinces are ideally distributed. The Punjab rivers, for instance, are spread like the fingers of an open hand; consequently irrigation can be easily carried throughout the length and breadth of the province. Moreover, in these provinces the surface is flat and the soil is soft so that canals can be constructed comparatively cheaply.

(3) The alluvial soil, though thirsty is very fertile and if water can be brought to it, the cost of canals is soon repaid by the levy of water rates on commercial crops.

The Punjab Canals

Main Canals. Punjab possesses the best canal system in the country. Almost the entire agriculture of this province is the gift of the canal irrigation

Emerson Barrage and Haveli Canals. This is the latest project in the Punjab and was completed in September, 1939. A barrage has been built below the junction of the Chenab and Jhelum. It gives water to some of the existing canals so as to ensure a more regular supply to them and also irrigates some new area. The canals taken out from the barrage provide a perennial irrigation of nearly 5 lakh acres. The total expenditure on the works up to the end of 1942-43 was Rs. 4 crores approximately.

The U. P. Canals

Main Canals. United Provinces next

come in importance. All the canals in this province are perennial. Their distribution is shown in the map on page 200. The important canals are the Eastern Jumna Canal (E. J. C.), the Agra Canal (A. C.), the Upper Ganges Canal (U. G. C.), the Lower Ganges Canal (L. G. C.), the Betwa Canal (near the Chenab) and the Sharda Canal joining the Gomti and the Gogra.

Sharda Canal. The Sharda Canal was opened only in 1928 and is a work of first magnitude. It has introduced irrigation in most of the districts of Oudh. About one million acres of land is irrigated by it, where sugarcane is mostly produced. It was completed in 1930 and its cost has come to 10 crores of rupees.

Canal Works in Sind ; Sukkar (Lloyd) Barrage

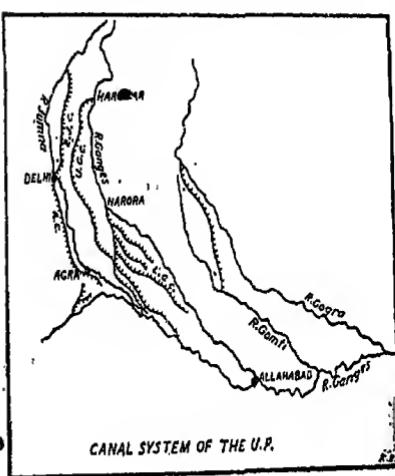
Map. 40.

About 10 years back Sind was very poor in canals. It had only a few in-

undation canals in which water flowed when the Indus was flooded. But in 1932 was opened the Sukkar (Lloyd) Barrage which is the largest work of its kind in the world. A long barrage of one mile has been constructed across the Indus near Sukkar. From the left bank of Indus have been taken out three large canals which distribute water over an area of 8 million acres. This canal has involved a cost of over 20 crores of rupees. It promises to irrigate 8 lakh acres of rice, 17 lakh acres of cotton and *joar* and 33 lakh acres of wheat and oil-seeds. Thus Sind bids fair to become an important rice, cotton and wheat growing area. Prosperous colonies with prosperous peasants are growing on the hitherto arid waste.

Canals in Madras

The Southern India is, as a rule, poor in canals. The oldest and the largest canals of this part of the country are to be found in Madras Presidency. Some tidal canals have been constructed in the northern part of the presidency for famine relief. An important system is the Periyar Canal System. The Periyar is a small river which formerly flowed into the Arabian Sea, but now a tunnel has been built up which diverts its water to the eastern coast where it irrigates the district of Madura. About 1,00,000 acres of land are cultivated by it. The recent work, which was completed only in 1934, is the Kaveri Mettur Project. It has been constructed with a view to improve the existing fluctuating water supplies to the Kaveri Delta.



Dams of Bombay Presidency

There are two important dams in the Presidency of Bombay :

(1) *Bhandardara Dam*. This dam has the reputation of being the largest in India. It takes the water of the tributary of the river Godavari and irrigates about 60,000 acres in the Ahmadnagar district.

(2) *Lloyd Dam*. It is built on the tributary of the river Krishna and irrigates Poona and Sholapur districts.

Canals in other Provinces

There is a Damodar River Canal in Bengal which irrigates the rain-shadow area of this province. The question of canal irrigation is under the serious consideration of the C. P. and N.-W. F. Province also.

Future Programme : D. V. A.

The Governments of Bengal and Behar, with the active support of the Government of India, have taken up a new project which is known as *Unified and Multipurpose Damodar Valley Development Project*. It is proposed to construct dams on the Damodar Valley ; and the project will provide (i) flood control, (ii) water for irrigation and (iii) hydro-electric power. That is why it is called "Multipurpose Development Project." This move has been inspired by the T. V. A. (Tennessee Valley Authority) of the U. S. A. which has made what was once an arid waste into a smiling region of fields and other economic pursuits. A new body, D. V. A. (Damodar Valley Authority) will be set up to complete and administer this project. It will bring considerable benefits in its train.

§ 4. ADVANTAGES AND DISADVANTAGES OF IRRIGATION

Advantages of Irrigation

(1) Irrigation is a corrective to the vagaries of monsoon and is a vital remedy for famines.

(2) It has made much of the arid and desert region a smiling land of flourishing crops. For instance, it has colonised the Punjab and Sind. By creating new centres of human habitation, it has led to a proper distribution of population.

(3) Irrigation works raise sub-soil water and thus fertilise soil. At the same time, the construction of wells become very easy, cheap and economical.

(4) Irrigation works have made possible the raising of two crops for the maintenance of a rapidly increasing population.

(5) Irrigation works have increased the agricultural produce ; and as this produce has to be transported from one place to another, it has also encouraged the construction of the means of transport and communications in the country, and has contributed to the profits of these ventures. Irrigation has added to the national wealth and the prosperity of the people. It also has a great educative value since it shows to the people how they can subdue nature to their own advantages.

(6) It has increased the Government revenue -hitherto uncultivated tracts have been brought under plough and have begun to yield revenues in the shape of land revenue, water rates, and several other taxes on the allied commercial and industrial activities.

Disadvantages of Irrigation

Irrigation is not free from disadvantages which are very prominent in the case of canals. Canal irrigation often leads to water-logging and soil efflorescence, which damage the soil. Large tracts of land in India have been rendered useless for cultivation

INTRODUCTION TO ECONOMICS

as a consequence. Water-logging also gives rise to malaria and other epidemics, which carry off thousands of people and render many more weak and inefficient.

The Government Works

The important irrigation works of the country belong to the Government. Government works are divided into productive works and non-productive works. Both put together irrigate about 30 million acres of land. Productive works are those works which within 10 years after their completion produce adequate revenue to cover both their working expenses and interest on their capital cost. Unproductive works, on the other hand, are not so profitable. They are constructed with a view to protect the regions liable to a draught and famines so as to cut short the expenses involved in famine relief. Productive works are built out of the borrowed funds, but unproductive works are financed from the current revenue and the annual grant for famine relief and insurance. Most of the largest irrigation works in the country belong to the productive group.

TEST QUESTIONS

1. What is the necessity of irrigation to the economy of India? What are the important types of irrigation works found in this country?
2. Why is it that Indo-Gangetic Plain is most noted for wells and South India for tanks? Write all that you know about these two types of irrigation works.
3. What is the difference between Inundation and perennial canals? Why is it that most of the canals are found in the Punjab and U. P.?
4. Write an essay on the "Canal works in India".
5. Show the advantages and disadvantages of irrigation in general and canal irrigation in particular.

U. P. Board

EXAMINATION QUESTION,

1. What are the different methods of irrigation practised in India? Describe the merits and demerits of canal irrigation. (I. A., 1942)
2. What are the chief means of artificial irrigation in India? Explain fully the chief advantages of canal irrigation in the United Provinces. How is it that some canals bring profit to the Government while others are run at a loss? (I. A., 1935)
3. Describe the types and extent of irrigation facilities that exist in these provinces. How far can they be extended? What are the benefits that the cultivator enjoys from irrigation? (I. A., 1932)
4. If you were given the choice of developing either the means of communication or irrigation in India within the next decade, what policy would you adopt? State clearly the reasons for your preference. (I. A., 1929)
5. Explain the economic advantages of irrigation in India using some of the large canals in the United Provinces or the Punjab as an illustration. Why do some canals bring a profit to Government, while others are run at a loss? (I. A., 1927)

Rajputana Board

1. Why are different types of irrigation prevalent in different parts of India? Distinguish between productive and unproductive irrigation works. (I. A., 1944)
2. What are the principal ways in which irrigation is practised in India? Explain the many advantages of such irrigation. (I. A., 1941)
3. Explain the economic effects of the construction of irrigation works in India. (I. A., 1937)
4. Why does the need for irrigation arise in India? What are the principal ways in which it is practised? Outline the principal effects of irrigation in India. (I. A., 1934)

Other Examining Bodies

1. Enumerate the different means of irrigation found in India, and explain the benefits that have been accrued to the Punjab from the construction of canals. (I. A., 1937)
2. What are the economic advantages of large schemes of irrigation carried out by the State? Discuss with reference to any such scheme which you know? (Punjab, I. A., 1931)
3. Describe the principal irrigation systems of India and give their importance.

(Nagpur, Com. & Arts, 1942)

CHAPTER 32

THE POWER RESOURCES OF INDIA

Of the forces provided by Nature which man has used to assist him in his productive efforts, one of the most widespread and one of the most useful is water-power. But, strange to say, it is only within the last few years that there has been anything like a real attempt to conserve and to utilize the immense force which lies hidden in every stream and waterfall.—*Person*

Just as irrigation is important for the success of agriculture, similarly power is necessary for the success of industrial development. Power really means force or energy ; but it has now come to signify such mechanical energy as may be used in driving machinery. Of the two fundamental essentials for the growth of industries, power is one, the other being raw materials. The gigantic machines of today, which cannot be operated by man and animal, are worked by power. The importance of power for modern industries can be well realised from the fact that the industries tend to concentrate or localise where power is available cheaply and easily. The supply of power is important not only for large scale industries but also for cottage industries. In Germany, Japan, Switzerland and elsewhere cheap electric power has enabled thousands of cottage workers to earn living in healthy and cheap surroundings amidst their wives and children. In agriculture, again, availability of power has led to the use of various machinery like elevators, tractors, etc. In the field of transport, again, it is the power which provides the motive force. To whatever economic aspect of life we may look, we will find that the *role* of power is supreme.

In our country power resources are numerous. There is hardly any source of power which does not exist in India. The chief sources are : (1) man ; (2) animal ; (3) wind ; (4) wood fuel ; (5) coal ; (6) oil ; (7) water.

§ 1. MAN ANIMAL COAL ETC.

Man Power

Man himself is the source of power, though the power he is capable of supplying is not enormous. The man power of a country depends upon the quantity and quality of its population. The population of India is very large, but her people are often weak ; in other words, man power of this country is quantitatively enormous but qualitatively poor. Our countrymen are so poor that they cannot get nourished diet, healthy shelter and other urgent requirements of life, and are, therefore, physically emaciated. They also fall an easy victim to various major and minor diseases which weaken them still further. Physical weakness is associated with mental poverty. If the people of this country are not in a position to feed themselves, they are still less able to educate themselves. Man power is, however, cheap because of large population and low standard of living, and will be displaced by machinery only with difficulty.

Animal Power

Animals are also the source of power, and can do some works which are beyond human capacity. Animal power is used on a large scale in India. In the agricultural economy of the country, cattle play a very important part and are the main source of power utilised in drawing water, ploughing fields, transporting commodities, and in other spheres of Indian agriculture. We possess about 6 crores of draught cattle which

cultivate 30 crore acres of land, irrigate it, thresh the produce and carry it to the market. Camels, donkeys and mules have their own sphere of usefulness.

The number of animals in this country is quite large, but their inefficiency is equally prominent. The Royal Commission on Agriculture reported that in whatever respect Indian cattle may be deficient, they are not deficient in numbers. The causes of inefficiency of our animals are various. The most important of them are the inadequacy of proper food supply, and the absence of proper care in breeding, housing and medical attendance. If attempts are made to remove these shortcomings, the efficiency of our animals may improve significantly.

Wind Power

Besides man and animal, wind can also be used as motive power. Inhabitants of mountainous tracts often use it as such, while the cultivators on the plains turn it to good account. In hilly regions wind-mills for grinding corns and lifting water are generally seen. In the plains we have the crude method of winnowing the grain whereby a man drops grain from above in a regular stream while the wind carries away the straw and other foreign matter mixed therewith.

Wood Fuel

Power is also generated by wood fuel. Indian forests are full of such wood, but these forests are not properly and fully exploited at present because of the absence of means of transport and communication and other difficulties noted in a previous chapter. Even if the means of transport are provided, it is doubtful that wood fuel can supply all the power that is required by the country. At present fuel is used mainly for domestic purposes.

It was the recommendation of the Industrial Commission that the method of wood distillation should be made popular because it yields charcoal as well as certain valuable by-products like alcohol and wood-tar which can be sold at good prices thus bringing down the cost of production of charcoal.

Coal Power

Coal is a very valuable source of power. We have already described the coal resources of this country in a previous chapter. The Indian coal is of poor quality and cannot be used in factories. Most of the Indian coal is, again, found in eastern India so that it becomes very costly in other parts of the country due to high transport charges. We cannot, therefore, depend upon our coal resources for the generation of any considerable amount of power at competitive price.

Oil Power

Power is also generated from oil. As already observed, the oil resources of this country are very poor. Oil is found only in N.W.F.P. and in Assam, in very small quantities. It is of little importance from the point of view of power supply.

§ 2. HYDRO-ELECTRIC POWER

It is rather a drawback of our economy that all the abovementioned sources of power are inadequate for our purpose and cannot meet our demand completely. But this shortcoming is compensated by our resourcefulness in water power potentialities. Water can be made to generate electricity which is known as hydro-electricity. Hydro-

electric power can be transmitted over long distances and used according to necessity. It has made rapid strides in recent years so much so that the hydro-electric power resources of a country may be taken as a good index of its industrial development. The Hydro-graphic Survey of India, which was carried on according to the suggestion of the Industrial Commission, showed the vast possibilities of the development of hydro-electric power in this country. It was shown, for example, that the flow of the seven great rivers eastward from the Indus is capable of giving not less than 3 million horse powers for every 1,000 feet of fall from the Himalayas while similar considerations apply to rivers in other parts of the country. India certainly bids fair to become one of the most important producers of hydro-electricity in the world.

Hydro-electric power or water power has several advantages. Firstly, it is the cheapest form of power. Its cost of generation is 75 per cent less than that of coal, fuel or oil. Secondly, the "tail water" can be used for irrigation purposes. Finally, electric power can be conveniently, easily and cheaply carried from one place to another through insulating wires.

It appears at the first sight that power schemes, pure and simple, should be generally difficult in India. Because if the power supply is to be continuous, the supply of tain should also be continuous, which is not the case in our country. In India the rainfall is concentrated only during a small period of the year, while rivers with sufficient water throughout the year are practically absent. This difficulty is, however, met by storing water for use during the dry season. Favourable sites for this exist in many parts of the mountainous and hilly regions where very heavy rainfall occurs. The progress already made in utilising such opportunities and the great facilities afforded by the electric transmission of power hold great promise for the future. Hydro-electric schemes can be easily associated with important irrigation projects, the water being first used to drive the turbines at the generating stations and then distributed over the fields for irrigation purposes.

We shall now study the important hydro-electric works in this country.

Mysore Hydro-Electric Works

The first important hydro-electric scheme undertaken in the east was that by the Mysore Durbar on the Kaveri river. Its main object was to supply power to Kolar gold fields. The generating station is Shivasundaram which is 12 miles distant from Kolar. This transmission line was for a pretty long time the longest line in Asia. The original plant has now been expanded to the capacity of maximum power that can be produced from the available water. But the consumption of electric power in this area is increasing rapidly. Mysore Durbar has, therefore, recently surveyed the hydro-electric power resources of the State and prepared plans for the construction of second generating station at the most economical site.

Kashmir Hydro-Electric Works

The second hydro-electric work in India was constructed by the Kashmir Durbar. The generating station is near Baramulla on the river Jhelum. Baramulla, now has the electric light. From that place power is taken to Srinagar where the transmission line terminates in the State Silk Factory which takes current for driving machinery and for lighting and heating purposes.

Bombay Hydro-Electric Works

The most important hydro-electric works in the Bombay Presidency are situated in the region of the Western Ghats which are specially fitted for the generation of

hydro-electricity, Messrs. Tata & Sons, Ltd., have started three "hydral" schemes in this area. The first scheme has been launched upon by the Tata Hydro-Electric Supply Company which was started in 1915. The hydral works are situated at Lonawalla at the top of the Bhor Ghats. There are lakes in which the rain water is stored, to be taken ultimately to power house at Khopali.

The second scheme was embarked upon when later investigation led to the discovery of a site on the Andhra river where water could be generated. Messrs. Tata & Sons thereupon floated the Andhra Valley Electric Supply Company in 1922 for the purpose.

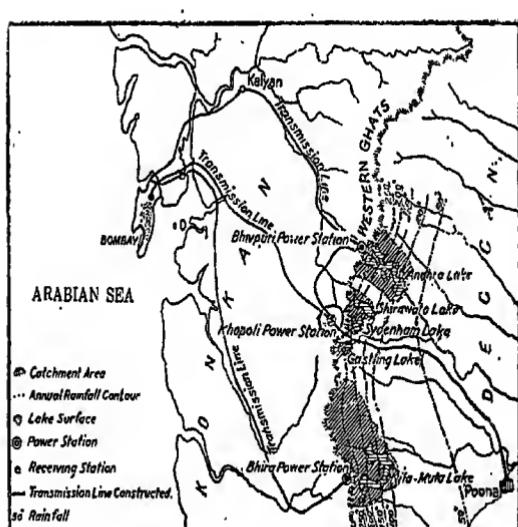


Fig. 41. The Tata hydro-electric works.

Ry., and by private consumers in Poona, Thana, Kalyan and the Bombay suburbs. Power is supplied to mills, factories and railways at the low rate of two pice per unit, which is likely to go down still with an increase in consumption.

Madras Hydro-Electric Works

The Madras Government started the Pykara Hydro-Electric Scheme in 1929 and brought it to completion in 1932. The Pykara river supplies the water utilised for the generation of the power.

Mettur Hydro-Electric Scheme is another work which deserves mention. The Mettur Dam is one of the largest structures of its kind in the world and can impound a total of about 100,000 million cubic feet of water. This storage is meant primarily

The latest scheme of the Tatas is located on the Nilamula river. The Tata Power Company was floated in 1927 and generated power along the lines similar to the Andhra Valley Scheme. The power is transmitted to Bombay over a transmission line which is 80 miles long. The power is used to contribute to the supply of the two earlier companies, to mills, factories and railways.

These three companies have been operating as one unit under one management. They supply the entire electric power required by the tramways, mills, B. B. & C. I. Ry. and G. I. P.

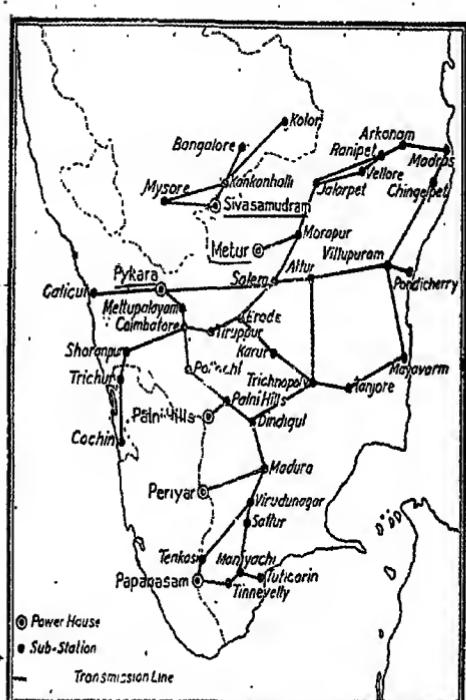


Fig. 42. The South Indian hydro-electric works.

of power. The scheme has been formulated in three stages. about 50,000 horse power from the ordinary discharge of involves the formulation of the storage and would double the third stage, the same water would provide an additional 54,000 horse power.

The Sutlej Hydro-electric Project was once expected to be very promising but has now been indefinitely shelved due to financial considerations.

Economic Effects of Hydro-Electric Development

The above account reveals what a great advance has been made in recent years in the development of hydro-electricity in our country. This vital economic factor has influenced the economic development of the country to a considerable extent, and has contributed to the prosperity of agriculture and industries. The future development of hydro-electric power may be depended upon to bring about similar salutary results.

Hydro-electric development is likely to be beneficial to our agriculture. Cheap and efficient electric power can replace weak and inefficient cartels. Electric power can be made to lift water out of wells, thus making irrigation easy and cheap. Improve-

for irrigation purposes, but is also used for the generation of hydro-electric power.

Hydro Works in the U. P.

The hydro-electric scheme recently completed in the U. P. is the hydro-electric grid scheme. Power is generated on the falls in the Ganges Canal System. Electric power is carried to a large number of towns in the districts of Saharanpur, Muzaffarnagar, Meerut, Aligarh, Hathras, Agra, Etah and others. It is expected that the supply of this power will lead to the economic development of the total areas in various ways and forms. A similar plan was also completed in Naini Tal in 1923.

Hydro Works in the Punjab

In 1933 the Mandi Project in the Punjab came in operation. The snow-fed water of Uhl river is used for the generation. The first stage produces water. The second stage increases the power generated. In

ments of this type increase output on the one hand, and reduce the cost of production on the other. Agriculturists doubly benefit in this way. Some labour will, however, be displaced as a result of the introduction of hydro-electricity, but it is believed that in the long run cultivators will be more than compensated for this immediate loss.

Rural industries are also likely to benefit immensely from the introduction of hydro-electric power. There are many industries which can be started in our villages but which have not yet been set up due to the absence of a satisfactory and cheap source of power. The supply of hydro-electric power is likely to bring such industries into existence. Cotton ginning, oil pressing, decortication of ground-nut and other cottage industries may, for instance, come to life and provide subsidiary and alternative occupation to our cultivators and other village-dwellers. The pressure of population on soil may thus decrease. The growth of rural industries will lead to a decentralisation of industries in general and will thus reduce the congestion of industrial towns.

Not only rural and cottage industries, but large scale industries have immensely benefited and will benefit in future from the development of hydro-electric power. Many of them could not have seen the light of the day without the assistance of the hydral power, and several others could not have achieved that excellence in the quality of their produce which they have now done.

TEST QUESTIONS

1. What is the importance of power in the economy of a country? Give an idea of the power resources of India?
2. Write a note on the man, animal and wind as power suppliers in India. What are their merits? Can they render adequate help even if these shortcomings are removed?
3. "Wood, coal and petroleum are found in India and can be made to generate electricity." Comment and expand the statement in its correct form.
4. Why is hydro-electricity considered so important in the industrial life of a country? Does India possess abundant resources of hydro-electricity?
5. What are the important hydro-electric works in India? Describe fully.
6. What, in your opinion, have been, and will be, the economic consequence of the spread of hydro-electricity in India?

EXAMINATION QUESTIONS

U. P. Board

1. What is the present position with regard to the supply of industrial fuels in India? What power resources promise good prospects of development in this country? (I. A., 1942)
2. "The natural resources of India are very great. What is chiefly required is their proper conservation, development and use." Explain this statement, particularly with reference to water power, forests and minerals. (I. A., 1940)
3. Mention the power resources of India, and state to what extent they are being utilised at present? (I. A., 1959)
4. What is the importance of power resources in the economy of a country? How far will those objects be promoted by the development of water power resources in U. P., and other parts of India? (I. A., 1956)
5. Mention the power resources of the country and state to what extent these are being utilised at present. (I. A., 1928)
6. What are the chief sources of power available in India? How can India's power be increased and distributed cheaply? (I. A., 1927)

Rajputana Board

1. Discuss the principal power resources of India, and enlarge particularly upon the future possibilities of hydro-electricity. (I. A., 1942)
2. How far is India equipped with power resources? Are there any prospects of further development of cheap power in this country? (I. A., 1938)

Note.—The "Transport system of India" is sometimes included in Production. We have, however, discussed it in Chapter 56 under Exchange (B), of IV to which a reference may be made.

CHAPTER 33

LABOUR

Since the essence of production is that it leads to the satisfaction of utilities, it follows that any labour of effort that yields utilities is productive. The musician whose performance brings us pleasure does precisely the same sort of thing as the flowers whose blossoms last for few hours.—Tausig

§ 1. MEANING OF LABOUR

The second factor of production is known as Labour. It is, like land, indispensable for production. No production, from the simple form of plucking fruits to the extremely complicated form of manufacturing cars and aeroplanes, is possible without labour. You find labourers working in small workshop and in big factories, in fields and in business shops, on docks and at railway stations. Though in the present age, much of the human labour has been substituted by machinery, still some labour has to be used even in the most mechanized establishments. Machinery themselves have to be operated upon by human labour.

The word labour is of common occurrence. In everyday speech it refers to the exertion involved in the performance of a work. The economic sense of the term labour is, however, not so wide. Firstly, it includes the work done by human beings only, and excludes the work done by animals. The bullock which draws a bullock cart, the dog which keeps a watch all through the night, and the donkey which carries the washerman's load everyday, all exert themselves but their exertion is not regarded as labour in Economics.

Again, human effort of each and every kind is not 'labour'. Since Economics studies only those human activities which have relation to wealth, labour refers to only that form of human exertion which is undertaken with a view to obtain wealth or to earn an economic reward. The exertion made without any economic motive but simply to derive pleasure or to perform some duty towards one's relations or country, is not labour. When you play tennis in the evening, you certainly exert yourself; but since your object is not to earn money but simply to keep yourself hale and hearty, it is not labour. The master, however, who teaches you how to improve your game, does so for earning his livelihood and his exertion will certainly be called labour. When you go for a picnic along with the servants who carry the needed articles, you do not labour, but the servants do.

Jevons defines labour as any exertion of mind or body undergone partly or wholly with a view to some good other than the pleasure derived directly from the work. Marshall has quoted this definition with approval¹.

It should be remembered that the word labour is used in Economics in the abstract sense as well as in the concrete sense. In the former sense, labour refers to human exertion (as defined above) while in the latter sense, it refers to labourers. The word labour is thus made to apply sometimes to the exertion which a labourer has to undergo and at others to the labourer himself. Students should clearly distinguish between these two meanings of the term.

¹Marshall, *Principles of Economics*.

§ 2. CHARACTER OF LABOUR

Labour, as a factor of production, has certain distinct characteristics which may well be remembered :

(1) Labour is indispensable for production, no production being possible without its aid. Even the richest gifts of Nature and enormous stocks of capital cannot produce wealth unless human beings exert themselves and harness them for the purpose.

(2) Labour is perishable. It is lost for ever with the passage of time. If a labourer does not exert himself on a particular day, the labour of that day is lost for ever and cannot be regained.

(3) Labour is not only a means of production but is also its end. Labourers not only help in the production of wealth ; but they are also the persons for the satisfaction of whose wants production is carried on.

(4) Money can be invested in labour. Money spent in the acquisition of skill, education and physical power does not differ from the money invested in the purchase of factories and machines. Both yield an income. Hence, labour is sometimes called 'human capital.'

Land and Labour

Land and labour are both indispensable factors of production, but there are some vital difference between the two. Firstly, land is a passive factor of production and is acted upon by man and machinery ; while labour is an active factor of production and makes use of other factors in the productive process. Secondly, land is strictly limited in quantity—it cannot be increased or decreased ; but the supply of labour can be increased or decreased. It can be increased by increasing birth rate or efficiency of labour or both ; it can be decreased by reducing the birth rate or efficiency or both.

Labour and Capital

Capital and labour have close relationship. Capital is nothing but "crystallised labour." It is just that part of wealth produced by labour, which is used in further production of wealth. But there are certain well-marked differences between the two. Firstly, while labour and capital are both destrucible, the former is capable of recuperation more frequently than the latter. Secondly, labour perishes sooner than capital. Labour deteriorates rapidly even when unused. A worker tends to grow weak with advancing age whether he is idle or busy. Capital, however, does not deteriorate so rapidly. An idle machine may deteriorate, but the loss will be only slight. Thirdly, capital can be transferred from place to place and from occupation to occupation more easily than labour. A man who has one lakh of rupees in the Imperial Bank of India can send it in no time to London or New York or Berlin ; and an owner of an iron and steel company can sell it any time and re-invest his capital in cotton textile company or sugar company according to his choice. But the U.P. labourer will think several times before making a move to Madras or to Ahmedabad. Finally, money invested in machinery and factory can be easily withdrawn by their sale, but the money invested in education and skill cannot be so easily got back.

§ 3. IMPORTANCE OF LABOUR

Labour is an indispensable factor of production. In simple as well as in complex forms of production, some kind of labour is inevitably involved. Everywhere on the face of the earth, man lives by the sweat of his brow. Even when Nature is bountiful in her gifts and human wants are as simple as they are few, some exertion is necessary

LABOUR

for the acquisition of desired articles. If fruits are wanted, they must be plucked ; if flesh is desired, animals must be killed. And as we move from the places, where natural resources are rich and extensive and climatic conditions favourable, to places where natural wealth is meagre and climate unfavourable, the importance of labour increases tremendously.

Compulsion to labour has indeed been the source of the civilisation itself. Man instinctively tries to work as little as possible. He has been making endeavours to avoid labour from the very beginning by several means like the invention of machinery and the introduction of division of labour. This tendency is called the law of least effort and is the foundation of economic progress. "It has been very well said that man works prodigiously to avoid work, exactly as it has been said that he has waged war so as to avoid future wars though he does not seem to have succeeded much better in the one task than in the other. It looks like a fool's game that he is playing—undergoing all sweating toils to make his task easier. But this fool's part that Nature makes him to play is really a blessing. It is fortunate that the object he aims at is always attained, he stops only when work becomes no more than the buzz of the bee or the chirping of the bird, that it will become the attractive labour that was the ideal of that admirable socialist, Fourier."²

§ 4. KINDS OF LABOUR

Labour may be classified into (i) productive and unproductive labour, (ii) skilled and unskilled labour, and (iii) mental and manual labour.

Productive and Unproductive Labour

Labour may be productive or unproductive. Since production means creation of utilities, all the labour which results in the creation of some utility is called productive while that which fails to do so is known as unproductive. For instance, the labour devoted to the writing of a book is productive if the book is published and brings profit to the author and publisher ; but if the book is not published, the labour involved in its writing is wasted and is, therefore, unproductive.

Which labour is productive and which unproductive, has long been the subject of discussion among economists. Early French economists, called Physiocrats, held that the labour of agriculturists alone was productive ; the labour of people other than agriculturists was unproductive. Later on Adam Smith, the Father of Modern Economics, extended the scope of the term productive labour and included in it all the labour which results in the production of material objects. According to him, the labour of a potter is productive but of a musician unproductive. But it will be appreciated that the labour of all the above persons is after all an exertion of body or mind and is of the same nature. It is, therefore, rather illogical and arbitrary to call the labour of a cook of them as productive and that of others unproductive. Modern economists, therefore, define the term productive labour as the labour which results in the production of some utility, whether that utility is embodied in some material object or not.

Skilled and Unskilled Labour

Labour may be skilled or unskilled. Skilled labour is that which requires some special skill and training in its performance. The labour which can be performed without any sort of special training is called unskilled. The labour of a domestic

Charles Gide, *First Principles of Political Economy*, (Row's Translation from the French) pp. 19-20.

servant and of a *chappasi* is unskilled, but the labour of a motor-driver, and engine-driver, a musician and a dancer is skilled.

Skilled labour is, as a general rule, highly paid because skilled labourers have to undergo special training, their supply is usually small and the demand for them is comparatively great. Unskilled labour, on the other hand, is poorly remunerated because of the absence of special training, its abundance, and a comparatively small demand for it.

There is a certain degree of competition between skilled and unskilled labourers. If a skilled labourer is thrown out of employment, he can take up an unskilled job and thus compete with unskilled labourers. But unskilled labourers cannot compete with skilled labourers for specialized and skilled jobs.

It is rather interesting to observe that as industrial, mechanical and general intelligence is increasing the gulf between the skilled and the unskilled labour is tending to be bridged over. In fact the term skill is relative to the conditions of a country. For instance, ability to read and write is regarded as 'skill' in India, but not in America where most of the people are educated. In our country education is making slow but steady progress ; and as it tends to become the possession of the majority of men and women, it will cease to be considered as 'skill.'

Mental and Manual Labour

A very common classification of labour distinguishes mental labour from manual or physical labour. It must, however, be recognized that instances of purely mental, or purely manual labour are extremely rare. The purest instance of mental labour involves some physical labour and the purest instance of physical labour involves some mental labour. The philosopher must move his tongue and limbs if he wants to express his ideas to others while the roughest ditch digger must exercise some intelligence in the performance of his task.

§ 5. SUPPLY OF LABOUR

We shall now consider what is the total supply of labour in a country and how is it measured. It appears at first sight that the supply of labour is equal to the number of labourers. But this is not exactly true, because labour power depends upon two factors : (1) the number of labourers ; and (2) the efficiency of labourers. Suppose a country possesses 10 crores of labourers while another country possesses 20 crores of labourers. If the labourers of the first country are twice as efficient as the labourers in the second country, the labour-power in both the countries will be equal. Evidently, labour is a two dimensional entity, its dimensions being measured by (i) number of labourers and (ii) their efficiency. The quantity of labour and the efficiency of labour form the subjects of the succeeding chapters.

TEST QUESTIONS

1. Define and explain the meaning of labour. If the labour of (a) an amateur painter, (b) a house-wife, (c) a student, (d) a teacher, and (e) a musician and labour?
2. What are the important characteristics of labour? How does it differ from (1) land and (2) capital?
3. What is the importance of labour in production? What do you mean by supply of labour?
4. Distinguish between productive and unproductive labour as clearly as you can.
5. Write short notes on : skilled labour ; physical and mental labour.

CHAPTER 34

QUANTITY OF LABOUR

Just as Darwin shocked traditional theology regarding the origin, so Malthus offended it in respect of the continuance of the human species.—Nicholson.

§ 1. THE SIZE OF POPULATION

The number of men, women and children living in a country at any particular time constitute the size of population. The size of population is determined by natural factors, i.e., births and deaths, and by migration.

1. Natural Factors

Births increase the population of a country while deaths decrease it. These are the two natural factors which go to determine the size of population of a country.

(a) Birth Rate

Birth rate expresses the number of children born per 1,000 persons living in a country during a given time. Births increase the size of population, if other factors remain the same; as such, the higher the birth rate, the greater the rate of increase of population. It is evident that if 30 children are born in a year among a thousand people in one country, and only 15 in a thousand among another country, the population of the first is likely to increase more rapidly than that of the second. The factors determining birth rate are not fully known but the more important of them may be discussed here:

(i) Climate. In hot countries people become mature at an early age and marriages take place fairly early; while in cold countries people mature late and marriages take place at a fairly advanced age. Naturally, the number of children born during the life time of a couple is more in a hot country than in a cold country.

(ii) Religious Customs. Where religion has a great hold on the masses, it plays an important part in determining the birth rate. In our country, for instance, religion enjoins that a girl should be married before she attains puberty, with the result that she gives birth to a large number of children before she becomes sterile. Birth rate is thus greatly increased.

(iii) Social Causes. Social customs also determine birth rate. Formerly people used to take pride in a large family which was an important cause of enhancing social prestige; birth rate was, therefore, very high. But late marriages have now become customary in this country, especially among the educated classes. A large family is now generally looked down upon and is considered to be a sure sign of carelessness, if not of poverty, of the couple. Such considerations have a diminishing effect on the birth rate.

(iv) Political Conditions. The Government, in some countries, encourage procreation as a definite state policy. In Germany and Italy, for instance, the Government use various methods to inculcate in the people a desire to produce more children. Such state inducement is likely to lead to a high birth rate, other things remaining the same.

(v) *Economic Conditions.* The desire to marry is also influenced by the standard of living of the people. Intelligent and foresighted youngmen and women have begun to postpone marriages until they are able to support a big family. Even when they are married, the high standard of living checks a rapid rise in the birth rate. This is not the case when the standard of living is low. Poor children cannot be sent to the school ; on the other hand, they easily find employment in factories or shops and begin to earn their upkeep. Economic independence induces them to marry early and settle down in life. The low standard of living thereafter leads to indiscriminate birth of children. The general tendency among the educated classes in this country, however, is to postpone marriage till the education of the boy is complete. Such consideration is, however, not given to the marriage of girls.

Condition in India. Birth rate in India is very high. It is a hot country. Celibacy is not favoured by either religion or social custom. In fact, every couple is advised to have a male child lest their souls might wander restless in the other world.¹ Economic conditions are also in favour of high birth rate. The standard of living of the people of the country is low and they procreate indiscriminately. People seem to think that it is not within their power to limit the number of children ; they are written in their fate and must take Birth. Who are they to interfere in God's wish ? There was a time in this country when according to Hinduism, young men used to lead a life of *Brahmacharya* or complete abstinence up to the age of 25, a factor operating against high birth rate. But this practice of *Brahmacharya* has now become a thing of the past. All the above factors have made India the second most thickly populated country of the world, the first being China.

(b) Death Rate

By death rate is meant the number of persons dying per 1,000 persons living in a particular country during a given period of time. Other things remaining the same, the higher the death rate, the lower the rate of increase of population. If in one country 30 persons die in a year out of a thousand, and in another only 15 die, obviously the latter will increase more rapidly in population than the former. The factors determining the death rate are the following :

(i) *The State of General Progress.* General progress reduces death rate. Educated and progressive persons take proper care in keeping their children neat and clean, and themselves lead a healthy life. They are particular about nutritious food, neat clothing, tidy shelter and other healthy requirements of proper living. As such, they live long and do not fall an easy victim to various major and minor diseases. In India, however, most of the people are uneducated and backward and rarely take such considerations into account. They fail to lead a life along healthy lines, die at an early age, and suffer from diseases so long as they live.

(ii) *The Age of Marriage.* If a couple is married at an early age and children begin to be born immediately thereafter, the physique of the husband and the wife is badly damaged and their life is shortened. Their children are also weak and many of them are carried off even before they are one year of age. This is what commonly happens in our country.

(iii) *Natural Calamity.* Natural calamities like earthquakes, floods and others take people unawares and are difficult to be handled. They increase deaths quite suddenly and considerably.

¹If a Hindu cannot beget a son, he must go to hell. His *mamas* must starve. He must marry as many wives as he likes but he must get a son. His sterile wives will not object to these marriages. Not only he but his ancestors are deprived of the spiritual blessing if no sons are born. The son is called *Putra* which literally means sevior from the hell named *pit*.—Sharden Joshi, *Oriental Astrology, Darwinism and Degeneration*, pp. 84-85.

(iv) *Poverty of the Masses.* It disables them from getting nutritive food, proper clothing and fair shelter. The poor have small power of resistance and whenever they catch some disease, they are seriously weakened. The death rate under such circumstances is usually high.

In India death rate is very great. The major and minor diseases very often break out and take a heavy toll of human beings. The female and infantile mortality is particularly disastrous and has been given special treatment in a subsequent chapter.

(c) Survival Rate

Increase in population due to natural factors is determined by excess of the birth rate over the death rate. This is called the 'survival rate.'

Population is said to be static when the births and deaths taking place in a country per year are equal so that the population remain unchanged. The population of France during the last decade remained more or less static. When births and deaths take place in such numbers that the population either increases or decreases, the population is said to be dynamic. When the population tends to increase, the dynamic is said to be positive, and when it tends to decrease, the dynamic is said to be negative.

2. Migration

The movement of people from one country to another is known as migration. Migration from a country is known as emigration while migration into a country is known as immigration. Emigration and immigration are important factors in the determination of the size of population of a country. The excess of immigration over emigration, which may be called the rate of net migration, increases the size of population. If, on the other hand, emigration exceeds immigration, population decreases. U. S. A., Canada and Australia have gained greatly in population by the large number of immigrants, while Ireland had her population reduced by emigration. In our country, migration is not an important factor in the determination of the size of population. Immigration into India is practically non-existent, while the colour prejudice and the bad treatment accorded to Indians abroad discourage emigration.

§ 2. THE MALTHUSIAN THEORY OF POPULATION

People of all ages have given some thought to the problem of the growth of population. The modern thought on the subject began from the year 1798 when Malthus, a clergyman and a Cambridge wrangler published his celebrated book named as *An Essay on the Principles of Population*. The law of population propounded by Malthus in this book is known as the Malthusian Theory of Population. Malthus' reasoning can be conveniently divided into three parts, the supply of labour, the demand for labour, and the conclusion.

(1) *The Supply of Labour.* Malthus argued that human beings have a natural instinct to multiply their numbers almost recklessly. He studied the history of the various countries of the world and found that it was so. The increase in population would have, indeed, been enormous were it not prevented by diseases, wars and famines, etc., all of which were called by Malthus, Natural or Positive Checks to Population.

(2) *The Demand for Labour.* According to Malthus the amount of food grown in a country is the limit set by Nature for the growth of population. It is, in other words, the maximum demand for labour. Population cannot manage to cross this limit for any length of time.

Malthus showed that up to the time of his writing, no country had been in a position to grow all the food for its increasing population. In other words, population tends to increase faster than the food supply. He illustrated this tendency by the use of geometrical and arithmetical progression. He said that if population be assumed to increase in geometrical progression like $1 : 2 : 4 : 8 : 16$ and so on, food supply will have to be assumed to increase only in arithmetical progression like $1 : 2 : 3 : 4$, etc.² Thus population tends to outstrip the means of subsistence.

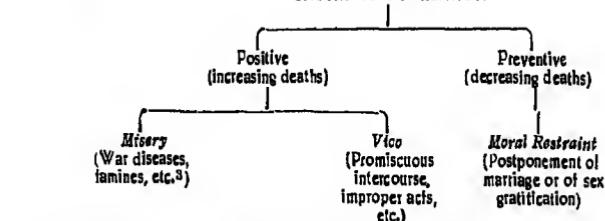
(3) Conclusion. This study led Malthus to conclude that history is likely to repeat itself. Population will always tend to outstrip the food resources and Nature will do her own pruning. Diseases, wars, famines and such other calamities (Positive Checks) will continue to carry off surplus population in future as they have done in the past.

The future of the society thus painted by Malthus was monstrously gloomy and dark; he was seriously criticized for it and began to be called a 'pessimistic economist.' He, thereupon, made further study of the problem and added preventive checks to the positive checks already mentioned by him. He opined that all the miseries to which Nature subjects humanity for carrying off the surplus population, i.e., the Positive Checks, can be escaped if human beings practise moral self-restraint, i.e., preventive checks, and thus keep population well within the limit set by food resources of the country. He thus formulated two kinds of checks to prevent population: (1) Preventive Checks, like moral self-restraint, which human beings can apply to escape the rude methods of decreasing population which Nature adopts; and (2) Positive Checks, i.e., the methods adopted by Nature for doing away with surplus population. Malthus appealed to Christians and non-Christians to exercise self-restraint and keep population in Check to escape the misery and vice that may be the lot of future generations.

Checks to Population

The checks to population propounded by Malthus may be studied in greater detail. According to him the available food supply is the natural limit against which population is constantly pressing. The methods of preventing population from crossing this limit, were called by him "checks to population." From the objective point of view he divided these checks into positive and preventive. Positive checks include those causes which increase the death rate and preventive checks refer to those causes which decrease the birth rate. From subjective point of view these checks were classified into misery, vice and moral restraints." Vice is different from misery inasmuch as its immediate effect may be happiness while the effects of misery are always bad. Moral restraint does not lead to misery or vice but causes a certain kind of temporary unhappiness. These checks have been tabulated below:

CHECKS TO POPULATION



²Sometime it is stated that according to Malthus food supply increases in arithmetical progression while population increases in geometrical progression. This is a wrong statement. Malthus never said this. He simply illustrated the increase in population and food supply by geometrical and arithmetical progressions respectively. This mis-statement is a very common error and should be avoided by the students.

³It is impossible that a positive check so goading and remorseless as laminine should prevail without bringing in her train all the others. Pestilence is her uniform companion, and murder and war are her followers.—Senior.

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It is interesting to note that Malthus did not really believe in his heart of hearts, that preventive check, namely, moral restraint, would ever be practised by a large majority of people and could be seriously depended upon to limit population. His wavering attitude paved the way for the so-called Neo-Malthusianism which sanctions the use of artificial methods of birth control as an effective preventive check to population. It differs from moral self-restraint inasmuch as it makes room for sex gratification unaccomplished with children, which make possible what Malthus describes "gratifying our passion only in that way which is unattended with evil."¹⁴ Mahatma Gandhi advocates the practice of moral self-restraint and does not favour the use of artificial means.

Criticism of the Malthusian Theory

Malthusian theory is not entirely correct. It was certainly correct at the time when Malthus propounded it; but since then the world has considerably changed, and many factors unforeseen by Malthus have come into play and have rendered his theory inapplicable to modern times. During the time when Malthus lived, population of Great Britain was on an increase; food supply was getting scanty. Great Britain could not draw food supplied from India or America due to the absence of transoceanic trade. Time was ripe for a theory as gloomy as 'Malthus'. All these conditions have now become things of the past. Population of Great Britain has increased only insignificantly. Food supply is not deficient now mainly due to the development of oceanic trade and transport. England has today become a great manufacturing nation and though she does not produce enough food for her dense population, she can exchange her manufactured products with the agricultural products of other countries and sustains a much larger population than what Malthus could imagine.

Malthus, in fact, exaggerated the rate of increase of population. He did not realise the biological fact that the fecundity of human race diminishes with advance of civilisation. A general rise in the standard of living of the world population has decreased births. Even in the lower classes, the enactment of the various Educational and Factory Acts, prohibiting employment of children, has made the begetting of children unprofitable. Malthus did not foresee all these developments. He also failed to give weight to the various social tendencies which today operate against an increase in population. For instance, there is a strong feeling in modern society against indiscriminate procreation which is regarded as a great folly and the old pride in large family has now vanished.

Malthus not only exaggerated the rate of increase of population, but he also failed to foresee the rapid increase in the food stuffs which modern nations can command. He did not realise that the Law of Diminishing Returns could be checked by improvements in methods of agriculture. He also did not understand that food supply produced by a nation is not an effective limit to her population; the limit is, in fact, set by the quantity of food stuffs that a country can command, either by herself producing it or by importing it from other countries. A manufacturing country may grow very little food stuffs but may export its manufactured goods and import food supplies instead, and may thus support a very heavy population. This is, for instance, what England is doing at present. In fact, the problem of modern society is not under-production but over-production; our problem is not how to produce more goods, but how to dispose of the goods that have already been produced.

Recent statistics definitely prove that in advanced countries like U.S.A., United Kingdom, France, etc., population has not increased so rapidly as the means of subsistence.

¹⁴See Gide and Rist, *History of Economic Doctrines*.

Malthusian Theory and India. Though the Malthusian theory is not applicable to the western countries, it is applicable to a backward country like India. In India population has been increasing more rapidly than the agricultural output. Our manufacturing industries are also undeveloped or ill-developed and disable us from getting food supplies from other countries in exchange for manufactured goods. The consequence is that population often presses against the limit set by the food supplies. People of this country are so illiterate and so blindly wedded to loose religious and social customs that they do not practise moral self-restraint. The absence of preventive checks is associated with the absence of the practice of artificial methods of birth control because of the poverty, illiteracy and conservatism of the masses. Naturally, therefore, Nature is bringing into action her own rough and crude methods. Diseases, floods, earthquakes, Hindu-Muslim riots, etc., take place very often and carry off the surplus population every now and then.

TEST QUESTIONS

1. What are the natural factors which determine the size of population? Discuss fully.
2. Give an account of the various factors which determine the birth rate of a country.
3. Write short notes on : surviaval rate and rate of net migration.
4. Does migration affect the size of population? Does it do in India?
5. State the Malthusian Law of Population. How far do you agree with it?
6. "Malthusian theory is a great principle of universal validity." Comment.
7. Criticize the Malthusian theory of population and show how far does it apply to India.

EXAMINATION QUESTIONS

U. P. Board

1. "When goods increase, they are increased that eat them." Ecclesiasts "When a young man in this country secures a good post, he finds that he is expected to clothe a large number of poor relatives." Discuss the bearing of these statements on the population question in India. (U. P., 1926)
2. Describe and examine critically Malthusian Theory of population. (U. P., Com., 1941)
3. Criticise the Law of Population by Malthus, and briefly state the points you would take into consideration in studying the population problem in India. (U. P., Com., 1938)

Rajputana Board

1. Explain the following :—(a) Natural increase of population. (b) Positive and preventive checks to population. (c) Optimum population. (Rajputana, 1943)

Other Examining Bodies

1. Has the population of Delhi increased or decreased in recent years? What are the causes of increase or decrease? (Delhi, 1939)
2. Describe some noteworthy facts about the population of Delhi during the last decade. Is population governed by any laws? (Delhi, 1937)
3. Enunciate the law of population laid down by Malthus. How far have later developments invalidated his position? Does the law throw any light on the population of Delhi? (Delhi, 1935)
4. What do you understand by over-population? Do you think Delhi is becoming over-populated? (Delhi, 1932)
5. Explain what is meant by positive and preventive checks to the growth of population? In a country with overgrown population which of the two checks would you prefer to bring down the number? Give reasons. (Delhi, 1930)

CHAPTER 35

EFFICIENCY OF LABOUR

The men whose heads and hands perform the labour in our industrial system are the chief factors of efficiency and success. The study of the workman in order to understand the various elements that affect his working power is an important and serious problem for every management.—Norris A. Brisso

Efficiency of labourers is one of the two factors on which the supply of labour of a country depends, the other being the size of population. The term efficiency of labour signifies the capacity of the labourer to do more work or better work or both during a given period of time. Efficiency of labour is a comparative concept. If a worker can work twice as much as the other, or if his work is twice as good as that of the other, he is two times as efficient as the other worker. It is a fact of common observation that labourers working in the same occupation under similar conditions with similar kinds of tools and raw materials and for the similar period of time turn out different quantities of work or work of different qualities. Why is it so? Why should there be such diversities in the productivity or the efficiency of the workers? What are the factors upon which the efficiency of labour depends? These are the questions to which we shall address ourselves below.¹

Factors Determining Efficiency of Labour

Efficiency of labour depends upon a large number of factors. It depends partly upon the employer and partly on the employed, partly on the organisation and partly on individual effort, partly on the tools and machinery, etc., with which the worker is supplied and partly on his own skill and industry in making use of them.² Broadly speaking, these factors are divisible into two classes :

- (i) Factors affecting the ability and willingness of labourers to work ; and
- (ii) Factors affecting the capacity of the organiser to organise labour.

The first set of factors is of greater importance than the second.

(i) Ability and Willingness of the Workers

Efficiency of labour mainly depends upon the capacity of the labourers to exert themselves ; and upon their willingness to work. Capacity to work unaccompanied with the willingness to labour, or mere willingness to work unattended with capacity, cannot make a man efficient. Below or discussed the various factors which determine the ability and willingness of labour to work :

- (1) **Racial and Hereditary Characteristics.** The qualities of one's race and parents determine one's efficiency to a great extent. Intelligence, physical strength ; capacity to sustain prolonged exertion and such other qualities pass on from one generation to the other imperceptibly. The sailors of Great Britain and Norway, the watch-makers of Switzerland, the artists of Italy, the cutlers of Sheffield and sword-

¹Social reformers attach much importance to efficiency of individuals. Dr. Samuel Smiles says, 'The highest patriotism and philanthropy consist, not so much in altering laws and modifying institutions, as in helping and stimulating men to elevate and improve themselves by their own force and independent individual action.'—Smiles, *Self-Help*, p. 3.

²Penson, *The Economics of Everyday Life*, Vol. I, p. 51.

makers of Toledo are noted for skill in their respective spheres even today. The caste system which is prevalent among the Hindus in our country was originally introduced with a view to preserve racial and hereditary characteristics. Though this system has now lost much of its hold, particularly in the economic field, still some of its influence continues to exist even today. A *Brahman* has an instinctive aptitude to the acquisition of knowledge, a *kshatriya* is by his very nature drawn towards the military life, while a *vaish* is naturally attracted to trade and commerce. Similarly the labourers of Oudh are better than the labourers of Bengal, while the former are superseded by the labourers of the Punjab.

(2) *Climatic and Physical Conditions.* Climate has a determining influence on the efficiency of labour. Extremes of climate do not favour sustained hard work. Labourers tend to become most efficient in a temperate climate. In very cold climates, people may find it difficult even to come out of their houses, while in very hot climate, the high temperature weakens the human frame. In our country, for instance, the climate of the Punjab and Western U. P., is good and the labourers of these provinces are, therefore, sturdy and strong. But the climate of Bengal is bad; and is worse still in the Tarai, regions where it becomes malarious. The labourers of these regions are often weak and inefficient.

Climate affects efficiency not only through its influence on the capacity and willingness of labourers to work but also through its reaction on the necessity to work. In tropical climates nature is generous in her gifts and little exertion is required for the satisfaction of human wants. Conditions tend to become harder in temperate climate under which much labour has to be undergone before one's wants can be satisfied. In cold climate, extremely hard work is necessary. The consequence is that labourers of hot countries are often dull, of temperate regions, active, and of colder climates, very hardworking. Climate also determines the necessities and other requirements of life and in this way also determines efficiency.

So far as our country is concerned, its climate is subtropical, hence our labourers are not very efficient. Hard work for a long period is difficult in the scorching heat of the summer. Moreover, natural resources are abundant and the need for hard work is not pressing. Finally, necessities of life are few, and can be satisfied by little labour with the result that people are used to little exertion.

(3) *General Intelligence.* Efficiency of labour also depends on the general intelligence of the labourer. Intelligence is inherited as well as acquired. Inherited intelligence depends upon the race and parents. Thus we see that an average American is clearer in his thought, quicker in his action and more exact in his judgment than an average Indian, while the latter is superior in these respects to an average Negro of Africa. The world as a whole, is, however, rising in the scale of civilization and mental attainments, and general intelligence is tending to become the possession of all. Intelligence is also acquired and depends upon the education in schools and the influence of the mother and home.

(4) *Education.* Education is a very important factor in the determination of efficiency, since it develops and awakens the latent capacities in man, and makes him otherwise fit as an active agent of production. Education may be general or practical. General education aims at widening the horizon of man's knowledge about general things. Such education gives the labourer a wider point of view and enlarges his conception of man and matter. It imparts to him social, economic and political enlightenment and strengthens his regard for morality. Such are the benefits of general education that in almost all the civilized countries of the world primary education has been made free and compulsory; while in France education is entirely free from top to bottom. Unfortunately India has not yet introduced free and compulsory primary education. General education is acquired, not only in schools, but also by the reading of books, magazines

EFFICIENCY OF LABOUR

and newspapers and keen observation. Such facilities are not accessible to Indian labourers.

Technical education aims at befitting a labourer for a particular trade or occupation. It may be theoretical, or practical, or both, its exact character being determined by the nature of the trade, the taste of the labourer, and the position for which he is preparing. Since it aims at developing certain qualities required in a particular industry, technical education makes a man specialist. An important cause of the poverty and distress is that so many have not learned a trade. In our own country technical training is conspicuous by its absence. Technical institutes and vocational schools are very few, while factory and mill-owners do not take apprentices as a general rule.

(5) *Standard of Living.* The efficiency of a labourer is also determined by the standard of living of his parents who bring him up from his birth? For a man's physical fitness is largely the result of this standard. A labourer who is brought up in an atmosphere of all round poverty, insufficient diet and insufficient clothing cannot be capable of great physical strain. The standard of living of the labourer himself has a similar influence on his efficiency. Healthy and nutritive food, adequate clothing and tidy and airy shelter associated with healthy recreation pave the way for efficiency. The adequate supply of all these factors to the masses of our country is the greatest national problem, upon the solution of which depends the welfare of the country.

(6) *Moral Qualities.* Honesty, sincerity, industry, and such other moral qualities determine the efficiency of a labourer. All these qualities are summed up in the word "character". Character-building is a great national duty and is the outcome of early educational, religious and social atmosphere in which a man is brought up. If the influence and the atmosphere are wholesome, the sense of self-reliance, self-control, self-discipline, diligence, purposefulness and such other qualities get a strong root and make a man thoroughly efficient; but if the influences are unwholesome, a man loses all these qualities and practically ruins himself.

(7) *Freedom, Hope and Change.* Freedom, hope and change increase the efficiency of labourers. A slave, who lacks freedom, also lacks in efficiency. Again, workers who have no hopeful prospects, even if they show good results, hardly have any incentive to be efficient. Finally, where the work is very monotonous and the worker is tied down to the same task day in and day out, he ceases to take any interest in the work; but if a system of pleasant change in the type of work that he does is introduced, he gains efficiency through the process of automatic recreation and recuperation of lost energy.

(8) *Adequacy, Nearness and Directness of Reward.* If a labourer gets sufficient reward, he is likely to work sincerely and become efficient. If the reward is insufficient and the labourer is dissatisfied with it, it will make him psychologically inefficient. Besides, it will keep his standard of living low and will not furnish him with the conditions which contribute to efficiency. The reward should not only be sufficient, but should also be nearer and direct. Labourers are, as a general rule, short-sighted, and do not take more than one year in their calculations so that if a reward is promised to them, it must be made available within one year. Otherwise it will hardly have any effect on them. Finally, the reward must be given to them in some direct form. If it is given in an indirect or hidden form, like the improvement of working conditions, or the sale of better quality of goods at cheap prices, they may not realize the advantages of the measure and its object may be defeated.

(9) *Working Conditions.* Efficiency is also affected by general working conditions. It has been found by experiments that improved lighting, ventilation, and sanitation of factories contribute to the muscular and mental strength of the labourers and as a consequence increase their output. In our country, much attention is not paid to the conditions of work. In karkhanas and small factories labourers have to work in

INTRODUCTION TO ECONOMICS

unhygienic, congested and badly ventilated rooms and *kothris*, where their physical and mental vitality deteriorates through a process of slow emaciation.

(10) The Number and Distribution of Working Hours. It is sometimes supposed that if the number of hours for which labourers work is increased, their output will correspondingly increase. But experiments in various countries of the world have shown the short-sightedness and mistake of such belief. In fact, reduction of hours up to a certain point actually increases, rather than decreases, the efficiency of labourers. If labourers work for a smaller number of hours, they get ample time for the recovery of their lost energy; so that when they go to work the next day, they are full of vigour and strength mentally as well as physically. They are, thus, able to produce more and in fewer hours than before.

Not only the number, but the distribution of the working hours is also important for the efficiency of the labourers. If the rest periods are wisely introduced and good use is made of that period, labourers will feel gay, happy and refreshed.

(11) Social and Political Conditions. Efficiency of labour is increased if social and political institutions, customs and laws are good, reasonable and prudent. Ill-conceived and bad social, political conditions always lead to the deterioration of the efficiency of labour. In our country, for instance, it is the caste which determines the occupation of a person at the time of his birth. Such a determination pays no attention to the aptitude of the person concerned which is indeed the most important factor to be taken into account. Similarly a long subjection to foreign rule has developed an inferiority complex in the masses of the country, which makes them feel that Englishmen are always more efficient than themselves. However, as a result of the recent political awakening in the country, this tendency is fast vanishing. Labour Legislation and Factory Laws have begun to insist on the provision of good ventilation and cleanliness in factories, sufficient wages, and short hours of work. Such steps tend to increase efficiency of labourers.

(ii) Capacity of the Organiser

Efficiency of labourers depends not only upon the ability and willingness of labourers but also upon the way in which the labour force is organised. If each labourer is given the task for which he is best fitted, if he is supplied with good appliances, and if he is properly trained for his job, his efficiency is bound to be great. These are the matters which are taken care of by the organiser. He is also to coordinate, in a proper fashion, the work of a particular group of labourers with that of all the other groups. The work done by the group is not merely the sum total of what the men could do as individuals. It is infinitely greater, and how much greater is a matter of organisation.'

TEST QUESTIONS

1. What do you mean by the efficiency of labour? Does it depend upon the organiser? If so, explain how.
2. What are the factors which determine the efficiency of labour? Discuss thoroughly.

EXAMINATION QUESTIONS

Rajputana Board

1. Explain the factors upon which efficiency of labour depends. (Rajputana, 1933)
2. What is meant by the efficiency of a factor of production? Why in India labour not so efficient as Japanese or English labour? (I. Com., 1944)
3. Explain the factors that affect the efficiency of labour. Illustrate from Indian examples. (I. Com., 1942)

Other Examining Bodies

1. Briefly explain the conditions on which the efficiency of labour depends. (Punjab, I. A. 1934)
2. Describe the factors that increase the efficiency of factory labour. (Delhi, I. A., 1930)

(For other questions, see questions after chapter 86.)

CHAPTER 36

THE POPULATION OF INDIA

Nature elements such as drainage, altitude, configuration, rainfall, temperature, fertility of soil, etc., are no doubt of basic importance in determining the density and distribution of population. But as civilization advances the human element plays an increasingly important part by transforming the environment — *Saigman*

We shall now study the numerical, physical and mental characteristics of the population of our country. These aspects of our labour problem are of fundamental importance to us.

§1. SIZE AND DENSITY OF POPULATION

Size of Population

India is one of the most thickly populated countries of the world. About one-fifth of the entire world population lives in India; every fifth man in the world is an Indian. According to the latest Census of India (i.e. counting of population) which was taken on March 1, 1941, the population of India is 39 crores. In 1931, it was only 35 crores, i.e., it increased during 1931-1941 by more than 11%. The following table shows the growth of population in India from 1872 onwards:—



Fig. 48. Showing that every fifth in the world is an Indian.

Year	Population	Percentage Increase
1872	210,000,000	
1881	250,000,000	23
1891	290,000,000	13
1901	295,000,000	2.5
1911	315,000,000	7
1921	320,000,000	1
1931	350,000,000	10
1941	390,000,000	11



Fig. 44. Showing the distribution of population in British India and Indian States.

India's is more thickly populated than other countries of the world. As compared to U. S. A., India is only one-half of the area of that country but its population is three times as large. Of this population, about two-thirds of the people live in British India and one-third in the Indian States.

Density of Population

Density of population denotes the number of persons living per square mile in a country. Obviously, the density of population in a country depends upon two factors : (1) the number of its people; and (2) its area. The population of our country is indeed very large, but its area is equally great, consequently the density of population is not considerable. It comes to about 200 persons per square mile. Population of other important countries of the world is much denser, as is shown in the table below :

Country	Density of Population per sq. mile.			
India	200
Japan	500
Belgium	700
Great Britain	700

Provincial Variations in Density

Two hundred persons per square mile is the average density of population of this country. As a matter of fact, the density is higher than this figure in some provinces while it is less in others. Delhi is the most thickly populated tract, its density exceeding 1,000 persons per square mile. The density is the least in Baluchistan, being only 9 persons per square mile. The following table shows the density of various provinces :

Provinces	Density			
Delhi	1,110
Bengal	646
U. P.	456
Madras	329
Punjab	239
Bombay	177
C. P. & Berar	155
Baluchistan	9

Causes of Provincial Variations

Why such variations in the density of population from province to province exist is an interesting subject of study. Other things remaining the same the part of the country where the chances of earning a decent living are the greatest will be most thickly populated. The possibility of supporting only a small number of people deteriorates the density of population. India is mostly an agricultural country; consequently, those areas where agriculture is most prosperous and where the chances of earning a decent living are greatest, generally speaking, the areas of thickest population. Density of population in India is, therefore, mainly conditioned by the factors affecting agriculture. Such factors are the following :

(1) *Surface Features.* The most important factor determining the density of population is the surface features playing, as it does, a dominant role in determining the success or otherwise of agriculture. On uneven and hilly tracts, agriculture is a costly and risky profession. Level plains, on the other hand, are most suited to agriculture. Throughout the country, therefore, hilly tracts are sparsely populated and level Plains are thickly populated. Indeed the Indo-Gangetic Plain is one of the most thickly populated parts of the world.

(2) *Rainfall.* The success of agriculture also depends upon the amount of rainfall. Generally speaking, 40 inches of properly distributed rainfall is best suited to Indian agriculture. Where the rainfall approximates this ideal, population tends to be dense; where rainfall is either less or more than this or badly distributed, density has a tendency to deteriorate. Students should be careful not to commit the mistake of writing that greater the rainfall, greater the population. Rainfall promotes dense population only to a certain point beyond which it has exactly the opposite result. If scarcity of rainfall is damaging to agriculture, superabundance of rain is equally harmful. Lower Burma, for instance, receives plenty of rainfall, but is sparsely populated.

(3) *Irrigation.* Where rainfall is scanty, irrigation, which happens to be a corrective to this deficiency, becomes an important factor in determining the density of population. Irrigation contributes to the success of agriculture and thus favours a thick population. The area known as the canal colony in the Punjab was once a dreary and dry desert; but after the construction of canals in that area, it soon became a smiling land of millions of agriculturists. Similarly the Sukkar Barrage in Sind has resulted in the rapidly increasing numbers which now inhabit that area. It must, of course, be noted that agriculture affect only a small part of the country and on the whole has little influence in determining the density of the whole country.

(4) *The Type of Soils.* The nature of soil is another important factor in the success of agriculture. Where soil is fertile and can be easily cultivated, population is dense. If the soil is, on the other hand, rocky and infertile, population is sparse. It must, of course, be stated that soil becomes an important factor in this respect only if the proper amount of rainfall is available. Taken by itself, the effect of this factor on the density of the population of the country as a whole is little.

(5) *Climate.* Suitable climate is another factor to ensure the success of agriculture. Other factors of agriculture may be quite favourable, but if climate is not suitable, agriculture cannot be properly carried on. Importance of this factor can be very well realised from the fact that the areas of unfavorable climate almost always coincide with low density.

(6) *Security.* Security of person and property leads to dense population. The areas liable to dangers of war or natural calamity or political oppression or exploitation, have sparse population.

(7) *Factors Affecting Migration.* To a certain extent, the whole host of factors which encourage or check the migration of population increase or decrease as the case may be, the density of population; and may even dominate over other factors discussed above.

(8) *Stage of Economic Development.* The stage of economic progress attained by a country or a part thereof has also some effect on the density of population. In the hunting stage, for instance, people led wanderers' life and the density of population was a meaningless term in those times. The pastoral stage led to some sort of fixed

habitation ; but as the domesticated animals required large grazing grounds, population was by the very nature of things, sparse. In the agricultural stage people began to settle down in certain localities ; food resources increased so that a dense population could not be supported. The density of population, naturally, increased. All the important agricultural tracts of India have thick population. In the industrial stage the density increases further as can be seen from the population of our industrial centres like Bombay, Calcutta, Cawnpore and others.

(9) *Industrial Development.* The above factors have reference to agricultural population. Thick population may also be a result of the elements leading to the industrial development of a region. As a general rule, where industries are localised, population is dense. All our industrial centres, like Bombay, Cawnpore, Calcutta, etc., are very thickly populated.

§ 2. HEALTH AND VITAL STATISTICS

Healthy population is the basis of a sound national economy. The will to progress and ability to achieve it flow from healthy mind and body. Physical efficiency of human beings lies at the root of the whole economic progress. An average Indian is physically weak. This is the result of the great poverty in which he is steeped and of his illiteracy, particularly his lack of public health conscience. Many of the people of this country do not get even two meals a day ; and the number of those who can get is small. The masses of people live in muddy hovels or insanitary rooms, in foul dirt and unequal productive of all sorts of diseases. They are equally badly and insufficiently clothed. Whatever they are capable of doing in the interest of better physique, they fail to do because of their ignorance and illiteracy. Under the circumstances, they lead an unhealthy life and are often visited by various sorts of major and minor diseases. The chief major diseases from which they suffer are : (1) cholera, which is a common occurrence in eastern India ; (2) malaria, which asserts itself in the areas of heavy rains and bad drainage ; and (3) tuberculosis, which is spreading like wild fire in our big industrial towns. Then there are minor diseases like plague, kala-azar, hookworm, which are as destructive as the major diseases. These maladies carry off thousands of persons each year and weaken many more. All-India Medical Research Conference remarked that "the average number of deaths resulting from preventable disease is about five to six millions, the average number of days lost to labour by each person in India is not less than 2 to 3 weeks in each year, that the percentage loss of efficiency of the average person in India is not less than 20 per cent and that the percentage of infants born in India who reach wage earning age is about 50 while it is quite possible to raise this percentage to 80 or 90... The greatest cause of poverty and financial stringency in India is loss of efficiency resulting from preventable diseases."¹

Vital Statistics

Statistics or figures relating to births and deaths are known as vital statistics. We had occasions to discuss in a preceding chapter that the birth rate in this country is staggering ; but the death rate is equally disastrous. Consequently the survival rate is small. The table below shows the birth, death and survival rates of India in different years :

¹Quoted by Vakil and Patel in *Provincial Finance Under Autonomy*.

Year	Birth rate per thousand	Death rate per thousand	Survival rate per thousand
1926	35	27	8
1928	37	26	11
1930	36	27	9
1931	35	25	10
1932	34	22	12
1933	36	22	14
1934	34	25	9

However, the survival rate in India exceeds the survival rate in other countries of the world, as is shown in the following table :

Country	Birth rate	Death rate	Survival rate
India	34	25	9
England & Wales	15	12	3
Germany	16	11	5
France	17	16	1

The causes of high birth and death rates in this country have already been discussed. Human life is very short in our country ; this factor is a stumbling block in our economic progress.

Death generally means the loss of experience and skill of the deceased at a time when he would possibly be of great help in the economic advancement of the country. The average duration of life in India is only 27 years ; whereas it is 43 in Japan and 67 in New Zealand. Female and infantile mortality are particularly high and need special attention.

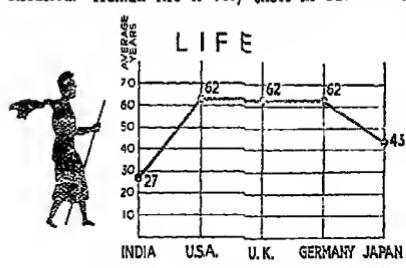


Fig. 45. Average duration of life in Indian and other countries.

Female Mortality in India

Death rate among the women in India is very great. It is very high particularly at the time of child birth. The chief causes of high female mortality are the following :

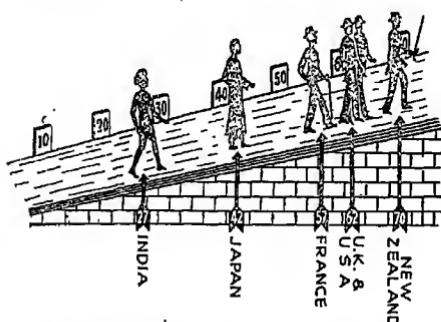


Fig. 46. Showing average duration of life in certain countries.

sequence is that thousands of child-wives march from the nuptial-bed to the funeral pyre within a short period of their married life. Nervous debility, tuberculosis and uterine diseases cause havoc among them.

(3) Quack mid-wives who nurse the Indian women at the time of childbirth use faulty methods which at times prove fatal.

(4) Female life is regarded cheap in this country and generally women neglect their health.

(5) Women working in factories have to attend to their duty immediately after the childbirth and just before it, which has disastrous effect on their health.

(6) The masses of the country are poor and are ill-fed and ill-clad ; so that once the constitution of women begins to weaken, it often leads to their untimely death.

Child or Infantile Mortality

Infantile mortality, like female mortality, reaches serious proportions in our country. India has the highest infantile mortality in the world. Twenty per cent of the children born, die before they are one year of age. Infantile mortality is particularly great in the towns. The table below gives the infantile mortality rates of certain towns for the year 1934 :

City	Death rates			
Lucknow	829
Bombay	298
Nagpur	270
Calcutta	268
Madras	246
Delhi	199
Lahore	187

The causes of high infantile mortality in India are the following :
 (1) All the factors which prove fatal to the mother or weaken her are also the causes of infantile mortality ; because the weakness of mother passes on to the child.

Children born of weak mothers die soon after their birth.
 (2) Indian mothers are generally ignorant of the principles of mother-craft. Improper feeding and faulty bringing up of children is a fruitful cause of their early death. Diseases like diarrhoea and dysentery which are common among small children often prove fatal to the delicate lives.

(3) The poverty of the masses is another very important factor. People not getting adequate food and clothing and living in unhygienic surroundings have to bring up their children in similar circumstances. They cannot give to their babies proper food and satisfactory environment to grow, and develop and when they fall ill, proper medical attendance is not available.

(4) Sometimes mothers have to work in factories. They are generally not given leave or maternity welfare before childbirth ; and they are required to join the factory immediately thereafter. They cannot afford to absent themselves from factory work due to their poverty. The hard labour which they have to undergo causes weakness which also makes their children weak.

(5) Very often mothers do not get time from family duties or factory work to attend to their children properly. Therefore, they adopt the practice of drugging their children. This causes nervous debility in children, resulting in their early death.

§ 3. EDUCATION OF INDIAN LABOUR

The Psychology of Indians

Education is an important factor in the determination of efficiency of labourers. It is partly inherent and partly acquired.

The psychology of the Indian people is instinctively non-practical and other-wordly and is prejudicial to economic prosperity. Mr. Jadunath Sarkar gives a vivid account of our mental furniture in the following lines :

The Indians (in generalisation be permissible in the case of such a vast and varied population) are slack-nerved, easy-yielding, awed by the stupendous forces of Nature and the might of Fate, and, though generally industrious and sober, apt to be led away by occasional outbursts of impulse or passion, habitually conservative, believing in the wisdom of their ancestors, fond of letting things alone, and inclined to sit under the banyan tree dreaming of metaphysics.

Annihilating all that's made
To a green thought in a green shade.

They are essentially mediæval in their thoughts and as far removed from the abstract "economic man" as can be imagined. Some of their very virtues, such as the domestic habit, patience, content with little, aversion to a spirit of adventure or speculation, and softness of heart handicap them in the economic race,²

This picture, though overdrawn, possesses some element of truth. Recently a wave of political awakening has spread throughout the country which has made our countrymen conscious of the grim realities and alive to the necessity of economic advancement.

Education

The education of the masses of the country is very unsatisfactory. The primary education is meagre ; hardly one out of every three villages has a primary school. It

²Sarkar, *Op. Cit.*, Ch. I.

is not compulsory anywhere except in a few hundred municipalities and rural areas. There is one middle school per 100 sq. miles, one high school per 315 sq. miles, and one arts college per 9,000 sq. miles. Under the circumstances, our labourers cannot attain that mental efficiency in the absence of which no lasting progress can be made.

§ 4. EFFICIENCY OF INDIAN LABOUR

Let us now discuss the problem of the efficiency of Indian labour. The problems which we have to face are mainly two : (1) Is Indian labour efficient, or inefficient ? (2) If the latter, what are its causes ?

Is Indian Labour Efficient ?

Whether Indian labour is efficient or not is sometimes debated, though this controversy is superficial. It is moreover a problem of advanced discussion, and will be given only a passing reference at this place. It has been argued by some people that Indian labour is probably the most efficient in the world. For, labour in India is so cheap that labour cost per unit comes to a very low figure, probably it is the lowest in the world. This may be so ; but the argument is not very plausible. Low labour cost is not the criterion by which efficiency of labour is to be judged. Efficiency of labour is to be tested by the productivity of labourers per unit of time. Labourers producing more or better goods in a given period are more efficient ; and labourers producing less or worse goods in the same period and under similar circumstances are less efficient. From this point of view, which is the only correct point of view, Indian labour is really inefficient.

Causes of Inefficiency of Indian Labour

The following are alleged to be the causes of the inefficiency of our labour :

(1) *Racial Characteristics.* Western writers have the habit of stating that Indian labourers are inefficient because they come from a stock having hardly any capacity for industrial work. This assertion betrays colossal ignorance of India's past economic achievements. Anybody who has some knowledge of the History of India can say that this statement is wrong. There was a time when India was the most advanced industrial nation of the world and her manufactures used to be the best in the world. Our workers are the descendants of the same labourers whose nimble fingers were celebrated throughout the world. Since the advent of the Britishers in this country, the decay of indigenous industries led to a deterioration in industrial efficiency. But once again India is marching on the road of industrial progress with set teeth and firm determination, and her labour is fast becoming efficient. In Tatanagar, for instance, the labour force was originally drawn from wild tribes but has now become so efficient that glowing tributes have been paid by foreign observers to its efficiency.

(2) *Climate.* Climate is alleged to be the next factor accounting for the inefficiency of Indian labour. This is true to a certain extent as the hot climate of our country does have a weakening influence on the human frame. But it must not be forgotten that our labourers still have an unusual capacity for hard and sustained work ; and they live in very rigorous conditions. The workers of Northern India—Nepal, N.W. F. P., and the Punjab—are very sturdy, though those of Bengal or Madras are not so strong and tough. Moreover, the progress of science and economic advancement of the country may lead to the adoption of artificial measures to make the climatic conditions more favourable for work. A spread of electricity for domestic and industrial purposes has already led to the use of fans, refrigerators, humidifiers and other such salutary devices.

(3) *General Intelligence.* The next factor which makes for the inefficiency of Indian labour is the low standard of general intelligence possessed by the average

Indian labourer. The home surroundings of our countrymen are hardly educative, mainly because of the illiteracy of the parents. Our education system is also not extensive; even primary education is not yet compulsory and free. It is due to this fact that our labourers are still conservative and immobile. It is absolutely essential that Government and private resources should be pressed to the service of education so that the standard of general intelligence of the labourers may rise.

(4) *Education.* Lack of education, general as well as technical, is another important reason of the inefficiency of Indian labour. Because of this deficiency, labourers also lack in cheerfulness, hopefulness and intelligence which greatly increase efficiency. At present our education is mainly literary. There is great need of technical and industrial education along both theoretical and practical lines.

(5) *Low Standard of Living.* The standard of living of the masses is very low which makes them weak physically as well as mentally. Our labourers live in dirty chawals or busties where drink, disease and immorality are rampant. Their food and clothing are far from satisfactory. The low standard is the result of poverty and illiteracy. Poverty is, of course, a many-sided and fundamental problem and its solution will require the change of almost entire economic mechanism. The spread of education and the popularisation of public health conscience may also be relied upon to do something in this direction. Organised attempts should be made for the improvement of public health including the supply of pure water, unadulterated food, proper medical facilities and the system of insurance against sickness.

(6) *Working Conditions.* Working conditions in the factories also contribute to the inefficiency of our labourers. Improper ventilation, defective sanitation, carelessness, dirty conditions and such other factors are common and reduce the efficiency of labour physically and psychologically. Factory Acts have been made for remedying such evils but more vigorous efforts have to be made in this direction. Propaganda is also very valuable, and it is really unfortunate that it has been neglected in this country so far. If capitalists are convinced that the money they spend in improving working conditions might be more than rapid in the form of increased production, they will themselves take the initiative in this direction.

(7) *Hours of Work.* Hours of work, if long, deteriorate efficiency. This has been the cause of some importance in reducing the efficiency of our labourers. Recently various factory laws have shortened the hours of work, but they are still too long for a country like India which has hot climate. It has been aptly remarked that the slackness and listlessness of Indian labourers are a form of protective device which they unconsciously adopt to prevent constitutional breakdown, which strenuous labour for long hours would otherwise inevitably bring about.

(8) *Labour Turn-over.* Indian labourers, as a general rule are not full-fledged labourers. They are essentially cultivators. They come to work in factories only when their fields do not require their services; and as soon as sowing and harvesting set in, they leave their factory work and return to their fields. This migratory character of Indian labourers checks the attainment of efficiency. Indian labourers can be made permanent, if industrial life begins to provide healthy conditions of living, favourable for leading a family, and sufficient wages for its maintenance.

(9) *Self-Satisfaction.* Our labourers are temperamentally self-satisfied. They lack the discontentment which leads to economic progress. Their outlook is essentially other-worldly and they care just for a living wage. If wages are increased beyond this limit in order to induce them to work more efficiently, they actually begin to absent themselves more frequently than before, because less work can now give them the desired income. With proper propaganda and education they should be made to

attach greater importance to their material wants and material well-being than what they have hitherto done.

(10) *Efficiency of Organisers.* India lacks organising capacity. As such we have to import foreign skill for the purpose. Foreigners are not very efficient organisers. The climate of this country rarely suits them. Moreover, they are used to efficient labourers in their own countries, and Indian labourers appear to them inefficient weaklings. Very often they become careless because they are paid considerable sums in advance and cannot be easily turned out. Rarely is an effort made to find out the suitability of a labourer to a particular task and the allotment thereof to him. Again, tools and machinery that are used are not always suited to the labourers. The use of defective machinery, it must be realised by our capitalists, is a false economy. We can improve the standard of organisation in this country if we send our own countrymen abroad for requisite training and see that they put into practice the latest advances made in the science and art of organization and management.

TEST QUESTIONS

1. What do you mean by density of population? What is the density of population in India? Account for its provincial variations.
2. Write a short note on "The Health of the Indian People and its Economic Significance."
3. What do you mean by vital statistics? Give an idea of the vital statistics of India.
4. Account for the high female and infantile mortality in India.
5. Suggest the reasons for the inefficiency of the Indian labour.

EXAMINATION QUESTIONS

U. P. Board

1. Explain the causes of high infantile mortality (a) in India in general, (b) at industrial centres in particular. What measures can be adopted to lessen the evil? (I. A., 1944)
2. India presents examples of very high and very low densities of population. Explain the factors that account for these wide differences. Do you agree with those who maintain that India is overpopulated? Give reasons for your answer. (I. A., 1948)
3. What are the causes of inefficiency of Indian labour? What remedies would you suggest? (I. A., 1941)
4. What do you understand by 'infantile mortality'? Explain the causes of the high infantile mortality rate in India. Suggest measures to check this evil. (I. A., 1940)
5. What are the factors which determine the efficiency of industrial labour? Apply them to Indian conditions and give reasons for the low efficiency of labour in India? (I. A., 1937)
6. Discuss the causes of the unequal density and distribution of population in the various parts of India. (I. A., 1937)
7. Analyse and discuss the causes of high infantile mortality in India. What steps would you suggest for eradicating this evil? (I. A., 1935)
8. Discuss fully the causes of the variations in the density and distribution of population in various parts of India. (I. A., 1934)
9. Do you think the factor of production labour in India is efficient? If not what proposal would you make for making it efficient? (I. A., 1933)
10. What are the chief causes of the inefficiency of Indian labour? How and to what extent can they be removed? (I. A., 1932)
11. Account for the distribution and density of population in different parts of India. (I. A., 1932)
12. Analyse carefully the condition upon which the efficiency of labour depends. How far are these conditions to be found in our industrial centres? (I. A., 1930)

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18. Examine the causes of high infantile mortality rate in India. What forces are at work to check this evil? (I. A. 1929)

19. State roughly the density of population of different provinces of India. What reasons do you assign for these differences? (I. A. 1928)

20. Explain why the pastoral stage permits a denser population than the hunting stage, but a less dense population than the agricultural stage. (I. A. 1927)

21. Tell how the efficiency of a labourer is increased by education.

(a) of the rural primary school;
(b) technical.

22. What are the causes of this lower efficiency? Suggest remedies to improve it. (U. P. Com. 1943)

23. On what does the efficiency of labour chiefly depend? How does the employer contribute to the efficiency of the employed? (U. P. Com. 1931)

24. Analyse the factors governing the efficiency of industrial labour? Is Indian Labour efficient? Discuss. (I. Com. 1939)

25. How do social customs affect the economic efficiency of the Indian people. (I. Com. 1937)

26. Analyse carefully the conditions on which the efficiency of labour depends. How far are these conditions to be found in our industrial centres? (I. Com. 1935)

27. Analyse carefully the conditions on which the efficiency of labour depends. How far are these conditions to be found in our industrial centres? (I. Com. 1935)

28. Define efficiency and suggest methods for increasing the efficiency of Indian labour. (I. Com. 1931), Rajputana Board

1. Consider the influence of the caste system on mobility of labour. Show how mobility of labour increases efficiency. (I. A. 1944)

2. Fully explain why the Indo-Gangetic plain is thickly populated. What inference, if any, can you draw from the fact that the density of Bengal is almost equal to that of England? (I. A. 1941)

3. In what manner does the standard of living affect the efficiency of labour? Illustrate your answer from Indian examples. (I. A. 1942)

4. Discuss the factors on which the density of population in several parts of India depends. (Ra., 1943)

5. Explain fully the chief factors which affect the efficiency of labour in India. (I. A. 1940)

6. Discuss the factors on which the density of population in several parts of India depends. (I. A. 1939)

7. Is Indian industrial labour in your opinion efficient? Explain some of the important measures which can be adopted to increase the efficiency of such labour. (I. A. 1937)

8. Write short notes on: Economic effects of caste system in India. (I. A. 1936)

9. Has the population in India been increasing, in your opinion, at a very high rate during recent years? Explain the measures which might be taken to prevent the increase of poverty amongst the people. (I. A. 1936)

10. Explain the factors on which the total population in India depends, and suggest any measures that may be taken to alleviate the economic distress that may be caused by an increase in population. (I. A. 1936)

II. What are vital statistics? How is it that our infantile mortality figures are high as compared to those of other countries? (I. A. 1932)

12. Describe the variations in the density of population in the different provinces of India. Account for the differences in density. (I. A. 1931, 1933, 1935, 1937)

13. Describe some of the social institutions of the Indians. How far do these institutions affect the efficiency of the Indian labourer? (I. A. 1931)

Other Examining Bodies

1. Examine the several factors which affect the efficiency of labour. Why are Indian labourers as a general rule less efficient than English workers. (I. Com. 1940)

2. What are the economic effects of early marriage and caste system in India? (Punjab, I. A. 1937)

3. What has been the growth of population in India in the present century? Explain how an increase in population in an old agricultural country influence the following:

(a) Value of agricultural-products.
(b) Rent of land.
(c) Income per man. (Punjab, I. A. 1938)

4. Is there any connection between rainfall and density of population. (Punjab, I. A. 1931)

5. Account for the difference in the density of population in various parts of India. (Nagpur, Arts & Com. 1942)

6. What are the factors determining the efficiency of labour? (Nagpur Com. 1942)

7. What is meant by "Efficiency in production"? Give an idea of the condition of the factory labourers in Delhi. Indicate possible lines of improvements with a view to increasing their efficiency. (Delhi, I. A. 1939)

CHAPTER 37

CAPITAL

Had legislators been aware that industry is limited by capital, they would have seen that the aggregate capital of the country not having been increased, any portion of it which they by their laws had caused to be embarked in the newly acquired branch of industry must have been withdrawn or withheld from some other; in which it gave, or would have given, employment to probably about the same quantity of labour which it employs in its new occupation.—*J. S. Mill.*

§ 1. MEANING OF CAPITAL

The minimum and indispensable requirements of production are land and labour; but land and labour alone cannot produce a commodity on a large scale. Artificial things are necessary to aid man's attempts if production of wealth is to assume large proportions. This fact was realised even by primitive people who invented some simple tools and implements to help them in different ways. Considerable progress has been made since then and today human beings use very intricate and gigantic machinery, mammoth factories, and a widespread net of transport system. All such artificial aids to production may provisionally be called capital.

Such articles have two characteristics in common: (1) they are articles of wealth; and (2) they are used for further production of wealth. *Capital may, therefore, be defined as that part of wealth, other than land,¹ which is used for further production of wealth.* Obviously all capital is wealth, but all wealth is not capital—that part of wealth which is not used for further production of wealth is not capital.

Whether an article of wealth is capital or not depends, not on any inherent quality in that article, but on the use to which it is put by its owner. Suppose, a man possesses a sum of Rs. 10,000. If he hoards it in iron chest, this sum cannot be called capital; but if he invests it in a factory instead, it will certainly be called capital. J. S. Mill, aptly observes, “The distinction between capital and non-capital does not lie in the kind of commodities, but in the mind of the capitalist, in his will to employ them for one purpose rather than another.²”

We can look upon capital from another point of view as well. The income of a person, as has already been remarked, may either be spent for the satisfaction of the present wants, or be put aside for the satisfaction of future wants. The latter operation may take the shape of hoarding or, of saving, which implies the use of income in a productive way. The part of income which is thus employed productively is known as saving.³ Saving is simply the conversion of wealth into capital by applying it to productive purpose.

Money and Capital

Some people imagine that money and capital are words with the same meaning. This, however, is not so. All money is not capital; only that money which is used for

¹Land should be excluded from the concept of capital because land is also wealth and is likewise used in further production of wealth. Hence capital should be defined either in the above way or as that part of wealth which is made by man and which is used for further production of wealth.

²J. S. Mill, *Principles of Political Economy.*

³But it should be remembered that capital includes not only the income used productively but also the wealth put for similar use.

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further production of wealth is capital. The money spent on the purchase of food, clothes and other things of ordinary consumption, or buried underground, is not capital. Again, all capital is not necessarily in the form of money. Big buildings, machinery, raw materials etc., are all capitals, but none of them is money.⁴ It must, therefore, be clearly remembered that capital has no especial relation with money, and nothing, be it money or not, can be called capital unless it helps in the further production of wealth.

§ 2. CHARACTERISTICS OF CAPITAL

The chief characteristics of capital are stated below :—

- (1) Capital is a dispensable factor of production inasmuch as wealth can be produced even without it. But for large scale production, capital is absolutely essential.
- (2) Capital wears out through wear and tear or passage of time, and has to be replaced. An American machinery, for instance, lasts for about ten years. It may, therefore, be assumed that 10 per cent of that machinery wears out each year. In the books of accounts, therefore, the value of machinery is reduced by 10 per cent each year, so that by the time the machinery becomes useless, its value also drops down to zero. Such shrinkage in value is known as depreciation.⁵
- (3) Capital is the result of saving which involves waiting. As such, borrower of capital has to give a remuneration to its lender, which is called interest.

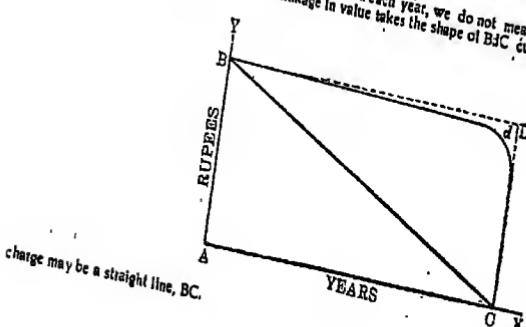
Land and Capital

Land can be distinguished from capital in the following respects :—

- (1) Capital is the result of human effort, but land is not made by any human being—it is the gift of nature.
- (2) Capital depreciates and has to be replaced, but land (its area and site) does not wear out.
- (3) Capital is produced only so much as to meet the existing or anticipated demand ; its production, in other words is regulated according to demand. But land continues to exist whatever the demand be. Capital, in other words, can be increased and decreased but land is fixed in quantity.

⁴Modern economists have begun to distinguish between (i) money which is used productively ; and (ii) articles, like factories and machinery, which are used productively. The former is called by them capital ; and the latter, capital goods. For instance, if a man invests Rs. 10,000 in the construction of a factory, the factory is his capital good, while the Rs. 10,000 are his capital. The distinction is helpful in advanced theorisation.

When we change 10 per cent depreciation each year, we do not mean that an exact $1/10$ th of the machinery has worn out. The actual shrinkage in value takes the shape of BJC curve, whereas the depreciation



Is Land Capital

It is the feeling of some thinkers that land should be regarded as capital. When a man they say, purchases a piece of land, he has to pay a price for it ; he does not get it free. It is not a free gift of nature to him. The purchase of land cannot be distinguished from the purchase of, say, machinery. As such, land may be safely included in capital.

This reasoning is not very plausible. It is true that land is not a free gift of nature to the purchasers ; but it is a free gift of nature to the society at large. Machinery costs something to the society as it does to individual ; but land does not cost anything to the society, though it does cost to the individual. There is, as such, an important difference between the two. This and other points of difference between land and capital show that land cannot be regarded as a capital. Each is quite distinct from the other.

§ 3. IMPORTANCE AND FUNCTIONS OF CAPITAL

The importance of capital has been emphasised in a previous chapter. Land and labour alone and unassisted cannot carry on production on any considerable scale. Without capital the energies of man can be only imperfectly executed and the gifts of nature only partially exploited. Capital enables men to utilize more completely nature's materials and forces by the substitution of roundabout methods of production for direct ones ; and it accomplishes this result by furnishing the tools for such roundabout methods, and by making possible a longer interval between the initial effort and the final effort, or 'consumption'. Even in the primitive life some sort of capital was made use of in the production of wealth. In the earliest stage of human development, people had invented stone weapons, bows and arrows, rough net and sharp stick. With the spread of knowledge and civilisation, importance of capital has also been increasing, so much so that the present age is called the 'Age of Capitalism'. Even if capitalism is superseded by some other system of social organisation like Socialism or Communism, the importance of capital is bound to remain supreme. No man has been so eloquent of the attainments and possibilities of the use of capital as Marx, the Father of Socialism ; and Russia, the communist country, has been making large-scale applications of it.

Functions of Capital

Specifically, the chief function performed by capital is to enable producers to start production and to wait for the result which appears only after some time. During the intervening period capital provides means of subsistence to the labourers and producers, and instruments of production and raw materials.

(1) *Provision of Livelihood.* In modern times goods are produced in anticipation of demand. A long time usually intervenes between the commencement of production and the final disposal of goods. During this period, it is capital which provides the wherewithal for the feeding and clothing and satisfying other requirements of producing agents.

(2) *Provision of Appliances.* Capital also provides factory, buildings, machinery and other instruments of production. Modern methods of the production of wealth are highly mechanized and comprehensive and require a mint of money.

(3) *Provision of Raw Materials.* Capital enables producers to purchase raw materials which are later on converted into finished products. Materials include not only such raw materials as are obtained from Nature but also partly manufactured articles.

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§ 4. TYPES OF CAPITAL

Capital assumes numerous forms and may be classified according to several standpoints. The following are some of the more important classifications of capital.

1. Fixed and Circulating Capital

Capital may be fixed or circulating. Fixed capital is of a permanent and durable nature, and is used in production over and over again. Buildings, machinery and implements are some of the examples. Fixed capital may, then, be defined as the capital which exists in a durable shape and which is used in production repeatedly for the performance of the same function. Circulating capital is capable of rendering service to production only once. For instance, tallow and alkali which are used in the manufacture of soap, can be thus utilized only once; they ~~seized~~ to be tallow and alkali after their first use and cannot serve that purpose again. Circulating capital may, then, be defined as the capital which is consumed in its first use in production and cannot be used more than once for the performance of the same function.

2. Production (or Trade) and Consumption Capital

Capital which is used in the production of certain articles is known as production capital. Raw materials, machinery and buildings are some of the examples of production capital. It is to be distinguished from the capital which satisfies human wants directly and is known as consumption capital. It includes the goods which gives a direct subsistence to the workers as food, clothes and light.

3. Sunk and Floating Capital

Capital which is specially designed and specialised for a particular purpose, so that it ceases to remain fit for any other purpose, is called sunk capital. Capital invested in making a bridge or in manufacturing a railway engine is sunk capital. But the capital which is not so specialised in its application and can be transferred from one productive use to another is known as floating capital. Cash and raw materials are the examples of floating or unspecialized capital.

4. Material and Personal Capital

When capital is embodied in a tangible material object and can, as such, be purchased and sold, it is known as material. The qualities of an individual, all those energies, faculties and habits which contribute to make a person efficient and cannot be transferred to any other person, are known as personal capital.

5. Remuneratory and Auxiliary Capital

The capital used in the payment of wages to labourers is known as remuneratory capital; while that which helps labour in production, like tools and machinery, is called auxiliary capital.

§ 5. EFFICIENCY OF CAPITAL

Efficiency of capital depends upon : (1) its fitness for the productive purpose to which it is put, and (2) the method of its application.

1. Fitness

By fitness is meant the suitability of the capital to the productive purpose to which it is devoted. This suitability depends upon the characteristics of the capital

and the nature of its employment. When both these factors are agreeable to the purpose in view, efficiency is achieved. An illustration will make the point clear. Suppose a very big building; sufficient to accommodate gigantic machines and thousands of labourers, is converted into a big factory, it will be quite efficient for that purpose. But if the same building is used as a workshop of a small artisan, it will be too costly and spacious to be called efficient.

2. Method of Application

The Method in which capital is used also determines its efficiency. If a machinery is handed over for operation to an unskilled labourer, he will not be able to make its best use; under his charge the machinery is bound to remain inefficient. Good materials and good tools are certainly great aids to efficient production, but they can achieve efficiency only if they are used by skilled labour working under good management.

§ 6. ACCUMULATION OF CAPITAL

We shall now consider what are the factors which govern the accumulation of capital. As J. S. Mill observes "Since all capital is the product of saving, that is, of abstinence from present consumption for the sake of a future good, the increase of capital must depend upon two things—the amount of fund from which saving can be made and the strength of its dispositions which prompt to it".* In other words, the accumulation of capital depends upon (1) the ability to save; and (2) willingness to save. The following chart is sufficiently illuminating in this respect :

ACCUMULATION OF CAPITAL DEPENDS UPON

(A) Ability to Save	(B) Will to Save	
	Subjective Conditions or Personal Motives	Objective Conditions or Conditions Prevailing within the Country
Excess of income over expenditure.	<ol style="list-style-type: none"> 1. Prudential considerations. 2. Social and political considerations. 3. Economic considerations. 4. Temperamental considerations. 	<ol style="list-style-type: none"> 1. Security. 2. Field and facilities for investment. 3. Capable businessmen. 4. Existence of the means of storing value.

Chart 47. Explaining the accumulation of Capital.

*J. S. Mill, *Principles of Political Economy*, p. 101.

Ability to Save

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Saving is possible only if one's income is greater than one's expenditure. If a man spends Rs. 200 per month and his income is exactly equal to that amount, or less than that, he cannot afford to save anything. But if the income of the same man rises to say, Rs. 250, he can save Rs. 50. It is the surplus of production over consumption then, which gives rise to capital. Such surplus may accrue either from increased production or from more economical consumption.

The Case of India. The ability of our countrymen to save is negligible. This is due to the fact that the income of the majority of the people is very small. In a previous chapter we have given figures to show that the income per head is among the lowest in India. It hardly comes to Rs. 100 a year, which is barely sufficient for maintaining a person even to the subsistence level. Under the circumstances capital accumulation cannot be expected to assume any considerable scale. It is only a few rich people of the country, whose income far exceeds their expenditure, who are the accumulators of large amounts of capital such as it exists in this country.

Willingness to Save

The excess of income over expenditure does not of itself lead to the creation of capital. There must also be a willingness on the part of person concerned to save money, that is, to put it to productive purposes. The willingness to put the surplus money to such purpose is influenced by two sets of causes: (1) subjective considerations, i.e., personal factors; and (2) objective considerations, i.e., conditions prevailing within the country. We shall discuss them below.

1. Subjective Considerations or Personal Factors

The important personal factors which prompt men to save money are the following:—

(1) **Prudential Considerations or Foresight.** Men sometimes save money as a provision against some contingency when their income might stop or go down due to some reason or the other. Factory workers, for instance, try to save some money which might support them during the period of unemployment or illness. In old age, too, one's earning capacity seriously deteriorates or comes to an end; and money is saved to be of help in such a time. People also try to save money with a view to leave something to their dependents after their death. These prudential considerations constitute what is generally called foresight.

(2) **Social and Political Considerations.** In the modern age of capitalism, it is wealth or capital which brings prestige, respect and power in social sphere and political life. The desire to command esteem and wield influence is an important cause of the accumulation of capital. The greater the esteem in which capital is held and the higher the social and political power which it is capable of giving, the greater will be the strength of this motive.

(3) **Economic Considerations.** There are certain important economic considerations which also lead to the accumulation of capital. The first of these is the desire to earn interest. The higher the rate of interest, the greater is the inducement to save money to take advantage of it. The second motive is the ambition to succeed in business. A businessman commanding large capital finds the gate of success open for him; while a businessman with small capital is seriously handicapped in numerous ways. Capital is, as such, also accumulated with a view to excel one's business competitors.

(4) **Temperamental Considerations.** There are some people with whom saving is a habit and is as assertive as any other habit. Just as they cannot live without eating and drinking, similarly they cannot probably live without saving.

The Case of India. In India, subjective forces do not generally operate very powerfully; they move only the richer sections of the population. The rich and the middle-class people have the desire to leave something for their dependents but the poor fail to take distant future into account, though the sense of family affection is quite strong with all classes of people. The desire to save for a "rainy day" shows similar characteristics. The possession of capital certainly gives social and political prestige in this country, but people are generally illiterate and poor and this ambition does not become effective in the case of the majority of people. High rates of interest are probably found attractive by them and some of them are proverbially habituated to save money. But so far as the majority is concerned, it only very rarely gets the occasion for exercising its willingness to save due to their extreme poverty.

2. Objective Considerations, or Conditions within the Country

A man possessing the ability to save will like to save only if the conditions prevailing within the country are favourable. The important conditions are the following :

(1) *Security.* A man will like to save money only if he is certain that his savings can be kept safely. If he fears that his savings might be taken away by robbers, or be snatched away by unjust tax-collectors of the Government, or be destroyed in warfare, or be devastated by such natural calamities as earthquakes and volcanic eruptions, his incentive to save will be damped. In early times life and property of the people were not safe; and the people were consequently thriftless. But the spread of civilisation and the establishment of organised society guaranteed them adequate protection, and capital accumulation on a large scale is an accomplished fact now. In our country the break-up of the Mughal Empire saw frequent wars, daring robberies and excessive taxation which fleeced the capitalists of their capital as sheep is fleeced of its wool. Such insecurity made people spend-thrift and reckless, and capital accumulation was very meagre.

(2) *Fields and Facilities for Investment.* People can put their money to productive purposes only when the fields and facilities for investment are available. In their absence the money which is saved will be hoarded and will not become capital. In the modern age, however, such fields and facilities have greatly increased in number and efficiency. Agriculture, industries, transport, hydro-electric works and other spheres of production have become highly capitalized and are in chronic need of capital. Facilities for investment have also multiplied on all sides. Everywhere we find banks, shares and bonds of companies, insurance policies, Government securities, all of which have greatly increased in popularity and have stimulated the accumulation of capital.

In India, however, fields of investment are not so large as in America or the United Kingdom, but the scope is definitely increasing with great rapidity. Large scale production in factories and farms, large iron and steel and hydro-electric works, big insurance and banking companies, are coming into being; and capital is tending to have diverse and various opportunities of finding satisfactory channels of application. So far as investment facilities go, they are not very satisfactory at present and lack both in numerical strength as well as in efficiency. Joint stock banks are not very many, while savings bank and co-operative societies are also few.

(3) *Capable Businessmen.* People are induced to invest money only in the concerns conducted and directed by trustworthy and capable businessmen. The business magnates who are well known for their business efficiency and for their honesty always inspire confidence in the public and large funds are easily entrusted to them without any hesitation. Such persons are very few in our country. Tatas and Dalmias can be counted on the tips of fingers. This is an important reason why

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capital is not very large in this country. Whenever any capable businessmen starts a work, there is no dearth of capital for him.

(4) *Existence of Money as a Store of Value.* People will save money only if they find that there exists a means of storing value for long periods without any loss. In India we have the rupee as our legal tender which is a good store of value.

The Case of India. The willingness of the people of this country to accumulate capital was not very powerful in times gone by because of the political and economic instability, insecurity and such other unfavourable factors. Since those times, however, conditions have been changing slowly and gradually. Since the last Great War in particular there has been a tremendous increase in the indigenous capital. But still the following remarks, made by Mr. Dudeney, are not very wide off the mark :

"Indeed, it is equally the strength and the weakness of the Indian native mercantile community that its members possess great wealth, yet fail to use it fully. Even the most wealthy among them are invariably subject to the inherited and ineradicable Oriental habit, bred of centuries of cruel necessity of hiding their money in such highly portable, convenient and easily hidden investments as jewellery and precious stones. If ever an Indian Pierpoint or Morgan comes he will not buy old masters, but will put his heart and his money into the collection of priceless diamonds, pearls and rubies. That is what every native capitalist does in his degree, and therefore, it should not be assumed that his credit is to be gauged only by the paper securities he can lodge with the banks."

§ 7. MACHINERY

Machinery represents the most important form of capital. Machinery has contributed richly to the modern civilization inasmuch as it has enabled man to subdue Nature. Machinery has created a revolution in the sphere of production and has increased the productive capacity tremendously. The modern machinery is a very complex and gigantic instrument of production and has gradually evolved out of the very simple tools first designed by the primitive man. Agriculture, manufacture, transport and other businesses have become highly mechanised. So important role does the machinery play in the modern economic and industrial organisation and so fundamental and far-reaching are its repercussions on social life that the present age is often described as the *Age of Machinery*.

Advantages of Machinery

The introduction and use of machinery on a large scale have brought about fundamental changes in our economic system. The chief advantages of machinery are discussed below :—

(1) Machinery increase the power of man over Nature. There are several tasks which man cannot possibly perform, or can perform only inefficiently, but they can be done very easily and efficiently by big machinery, like steam-hammers, gigantic cranes and floating docks. Machinery have enabled man to compel Nature to release her forces for the benefit of mankind.

(2) In the absence of machinery, continually repeated mentions involved in certain jobs strain human muscles and often cause monotony, or even premature death. Such arduous work is now done by machinery which have thus spared human beings from terrible results. The common examples of monotonous work are the folding of newspapers and the feeding of papers in a printing press, both of which are now done by machinery with great quickness and precision.

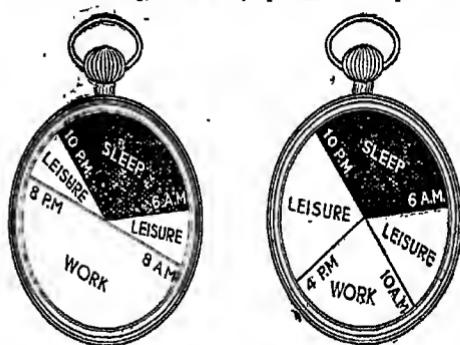
(3) Machinery can unleash superhuman energy and thus increase the quantity of output tremendously. They also improve the quality of the output in certain respects.

⁴Frank M. Dudeney. *The Exporter's Handbook*, p. 23

They have made the output uniform and have introduced an era of mass production. Mere hands can rarely make two things similar; but the machinery can forge them exactly alike. The standardization of output has brought in several advantages, the most important of which is the possibility of the interchangeability of the parts of machinery.

(4) Machinery make large scale production possible and ensure the availability of consequential internal and external economies. Output is thus increased at reduced cost per unit.

(5) Machinery saves time and gives rise to greater leisure. This leisure may be used for reading, recreation, spiritual development and other useful activities. The following diagram shows this fact clearly.



Before the introduction of machinery

Fig. 48. Showing how machinery saves time.

After the introduction of machinery.

give to labourers command over their eyes and hands. Labourers also increase their knowledge when they learn the working and mechanism of machinery.

(8) Machinery have increased the mobility of labour from one occupation to another. As the mechanisation spreads, the ability of labourers to move also increases proportionately.

Disadvantages of Machinery

Though machinery have brought about so many advantages, their effects have not been altogether beneficial. They have been responsible for bringing about economic, physical and moral degradation among workers. Such disastrous results have often led to rebellions among the workers during the course of which they typified machinery as their greatest enemy and smashed them into pieces. But it is now growingly realised that in the long run these disadvantages are more than amply repaid. The chief shortcomings and disadvantages of machinery are mentioned below :

(1) The greatest argument given against the introduction of machinery is that they displace labour. Machine is a 'laboursaving device' in the sense that it can do the work of a large number of men who are thrown out of employment when machinery is introduced.

This, of course, happens in the earlier stages of the introduction of machinery. But later on the displaced labourers get employment on better wages and under improved conditions than before. This happens because the demand for labour is increased later on due to the following factors : (a) machinery reduces the price of

(6) Machinery have enabled unskilled labourers to do the tasks which could formerly be done only by few skilled labourers. Disgusting and disagreeable work like that of a sweeper is also taken over by machinery. Very delicate and fine work which human eyes and hands can do only with great difficulty and with rare success is performed by machinery with great ease. There are machines which can even measure the diameter of a hair.

(7) Machinery increase the intelligence, resourcefulness and responsibility of workers. They

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goods. Reduction in price increases the demand for them. The need of producing more goods gives employment to more labourers. (b) To produce more goods, more machines are required, to manufacture which more labourers are employed. (c) More raw materials are also needed for turning out increased quantity of goods and labourers are employed to produce more raw materials. The demand for labour thus increases after sometime and the entire displaced labour finds employment on excellent terms. (This reasoning is, however, true only if the machinery is manufactured in the same country in which it is used. If, on the other hand, machinery is made in one country while it is used in another, the labour of the latter may be thrown out of employment and may not be re-employed.)

(2) Machinery makes skilled workers semi-skilled machine operatives. For instance, before the introduction of machinery in our country, Indian weavers were famous for their art. We hear of the fine Dacca muslin, 20 yards by one yard, which could be made to pass through a finger ring and required six months in manufacture. Such artists are not to be seen now. They have all disappeared because there is no market for their products. Their articles are better in quality than the factory articles, but the latter are very cheap while the prices of the former are almost prohibitive. High class handmade articles do not sell now and skilled artisans have been compelled to work in factories as semi-skilled labourers.

(3) Machine-made articles are not as beautiful and artistic as some hand-made goods. The most artistic articles are still produced by hand. For instance high class and beautiful silk saris are usually woven on hand looms. Machinery, by its very nature, cannot devote that individual care and attention to minute details without which high art work cannot be produced.

(4) Machinery has been the cause of much physical and moral deterioration. Introduction of machinery has led to congested and over-crowded towns where labourers have to live in dirty quarters and to spend their lives in reeking fester of the slums. In such habitations, the drinking habit, the excessive sex indulgence, the deterioration of health and numerous other social evils find free play and unfettered nourishment. As consequences of mechanisation have followed the 'sweating' of labour, over-exertion of the adult and undue strain on women and children. The moral independence, sense of security and self-reliance of labourers are now things of the past. The poor machine-tender can be 'fired' at a moments notice and he has to starve during the period of unemployment.

(5) Machinery have led to large scale production which, in turn, often leads to over-production, i.e., production in excess of demand. Over-production leads to a 'glut' in the market, shrinking prices and economic depression. This allegation is, however, incorrect. Careful examination shows that over-production is not the result of large scale production of machinery, but of miscalculation on the part of the producers. If the demand could be exactly anticipated and measured and if the activities of individual producers could be thoroughly regulated, there could not arise any opportunity for over-production; but since this is not an accomplished fact, over-production is a frequent occurrence.

On weighing the advantages and disadvantages of machinery, theoretically as well as practically and considering the history of economic development of our country in the present age lies in rapid mechanisation.

TEST QUESTIONS

1. Explain and define capital. Is there any difference between saving and capital? Is money capital?
2. What are the characteristics of capital? 'Land is capital'. Comment.

3. Discuss the importance and functions of capital in production.
4. Write short notes on: (1) Fixed and circulating capital. (2) Production and consumption capital. (3) Sunk and floating capital. (4) Material and personal capital. (5) Remuneratory and auxiliary capital.
5. What are the factors on which efficiency of capital depends?
6. What are the factors on which the accumulation of capital depends. Discuss with special reference to India.
7. Discuss the advantages and disadvantages of machinery.

EXAMINATION QUESTIONS

U.P. Board

1. Define the term *capital*, and distinguish between fixed and circulating capital. Discuss the importance of capital in Indian agriculture. (I. A., 1942)
2. Discuss the advantages and disadvantages of the use of machinery. (I. A., 1941)
3. What are the conditions for the growth of capital in a country? Illustrate with special reference to present-day conditions in the United Provinces. (I. A., 1940)
4. What are the conditions which favour the growth of capital in a country? Discuss these fully, with special reference to Indian conditions. (I. A., 1938)
5. Distinguish between (a) Fixed and Circulating Capital, (b) Wealth and Capital. (I. A., 1987)
6. Define fixed capital. How does the use of capital increase the productivity of labour? What services do railways render to wealth production in India? (I. A., 1936)
7. Carefully define the term capital and explain the part which it plays in the production of wealth. Account for the slow growth of capital in India. (I. A., 1935)
8. Define capital. Is land included in capital? Give reasons for your answer. (I. A., 1931)
9. What do you understand by the term 'capital'? Indicate the conditions that determine its supply and examine to what degree these are fulfilled in our villages. (I. A., 1928)
10. Define the term 'capital'. Distinguish between 'fixed' and 'circulating' capital. Do you consider the following to be capital?
 - (a) Seed corn, (b) hoarded rupees, and (c) good-will of a business. (I. A., 1925)
11. Discuss the advantages and disadvantages of the use of machinery in modern production. (I. Com., 1943)
12. Define capital and distinguish between fixed and circulating capital. Do you consider the following as capital: (i) good-will of a business, (ii) the skill of a doctor, (iii) the miser's wealth, (iv) a house, and (v) the intellect of a teacher? (I. Com., 1941)
13. Discuss the conditions which affect the accumulation of capital in a country, and show to what extent they exist in India. (I. Com., 1939)
14. Define fixed capital and circulating capital. Contrast the fixed and circulating capital of a manufacturer with that of a merchant. (I. Com., 1987)

Rajputana Board

1. What are the factors which affect the growth of capital? How do you account for scarcity of capital in India? (I. A., 1945)
2. (a) Capital is subdivided into (i) fixed and circulating capital, (ii) specialized and free capital. Give examples of each sort of capital.
3. The progress of producing wealth with the aid of capital has been called *indirect* or *roundabout* production. Why? (I. A., 1948)
4. Explain the factors on which accumulation of capital in a country depends, pointing out which of these operate in India. (I. A., 1941)
5. Discuss the advantages and disadvantages of the application of machinery in production. (I. A., 1941)
6. Discuss the factors on which accumulation of capital in a country depends, pointing out which of these operate in India. (I. A., 1940)
7. "Indians are more thrifty than Englishmen and yet it is the capital of the latter that has built railways and other great works in this country." How do you account for this? Enumerate the causes that have retarded the growth of capital in this country. (I. A., 1939)

CAPITAL

8. What are the functions of Capital? What is meant by saying that capitalistic production involves roundabout process? (I. A., 1938)

9. Discuss the factors which bring about the accumulation of capital with particular reference to conditions which exist in India. (I. A., 1930)

10. Discuss fully the advantages and disadvantages of the employment of machinery in production. (I. A., 1936)

11. Distinguish between circulating and fixed capital. Explain your answer by taking examples of these from items of capital used by (a) the Indian agriculturist, and (b) a carpenter. (I. A., 1933)

12. Define capital. How will you distinguish fixed capital from circulating capital? In what different forms does an Indian cultivator use capital? Which of them are fixed and circulating. (I. A., 1932)

13. What is capital? Enumerate the conditions that have retarded its growth in our villages. (I. A., 1932)

14. What conditions favour the growth of capital in a country? Discuss these fully, with special reference to Indian conditions. (I. Com., 1949)

15. What are the factors that help the growth of capital? Which particular factors would you wish to improve in India? (I. Com., 1942)

Patna-University Bodies

1. Explain the advantages and disadvantages of substituting machinery for labour. (I. A., 1942, Annual)

Other Examining Bodies

1. Indicate briefly the services rendered by capital in production. (Punjab, I. A., 1930)

2. Define capital. Explain the functions performed by capital. (Punjab, I. A., 1934)

3. What is capital, and how does it come into existence? Is it correct to consider it as an independent factor of production? (Punjab, I. A., 1928)

4. What are the factors which determine the volume of savings? Explain the part played by capital in the economic development of a country. (Nagpur, I. A., 1931)

5. Examine the effects of machinery on labour and discuss whether the progress of mechanical inventions is injurious to the labouring classes. (Delhi, I. A., 1938)

6. What do you understand by capital? On what does the growth of capital in a country depend? (Delhi, I. A., 1938)

7. How does saving differ from hoarding? Point out the motives that induce men to save and the conditions that encourage saving. (Delhi, I. A., 1938)

CHAPTER 38

ENTERPRISE

Normally it may be presumed that an independent entrepreneur does not make less than a manager of like abilities, and perhaps he does not make much more...If the remuneration of the manager is just equal to the amount which he produces, then the remuneration of the entrepreneur is not very different from the amount he produces.—*Edgeworth*

Business of every size and description involves a certain amount of 'risk' or what is called in Hindi *jokhim*. A businessman has to anticipate or forecast the quantity and quality of goods likely to be demanded in the market in the near future, and to produce or purchase goods in the light of this estimate. If, due to some reason or the other, his forecast goes wrong, he stands to suffer a loss. For instance, a mill-owner may produce goods of a particular kind in the hope that they will be in demand; but the demand may unexpectedly shift from the mill cloth to the hand-woven cloth. The goods produced by the said mill will not be sold and the mill-owner will suffer a loss. Similarly, the actual cost of raw materials, the rate of interest and the rate of wages may exceed the anticipated cost, with the result that the cost of production may rise unexpectedly and a loss may result. Just as a business stands to lose, similarly it stands to gain as well. It may earn huge profits if unforeseen favourable events occur. Evidently there is an element of 'uncertainty' in the business. *This factor of uncertainty or risk is called by economists enterprise.* The person who undertakes the risk or bears the uncertainty is known as the *entrepreneur*.¹

Enterprise and Organisation

Some economists think that organisation and enterprise are inter-changeable words; and these two functions are performed by one and the same man who may be called either an entrepreneur or an organiser. This opinion is incorrect inasmuch as these functions may or may not be combined in one man. The joint stock company is the most typical business unit of the modern age and in it the function of organisation is undertaken by paid managers while the function of risk-taking is performed by shareholders. Apart from this objection of a practical nature, it may be added as a theoretical argument that in theory the functions of organization and risk-taking are definitely separate and can be conceived separately. As such, it is better to consider them as two different factors of production.

§ 1. FUNCTIONS OF THE ENTREPRENEUR

In the domain of production enterprise plays an important role. No production is possible unless somebody is prepared to bear the risk which production involves. This is more so today than it has been ever before. Nowadays demand has to be anticipated and goods have to be produced according to such anticipation. The anticipation or forecast depends on a large number of variable factors so that no finality can be attached to the estimates. The element of risk in modern business can, therefore, be well appreciated. As markets are growing larger and uncertain, as the processes of production are becoming increasingly complex, lengthy and round-about, as consumers

¹The word "entrepreneur" is of French origin and has been derived from the French word "entreprendre", which means the 'undertaker'. The English equivalents of "entrepreneur" are "undertaker" and "enterpriser". But the latter are hardly used; the "entrepreneur" is the usual expression adopted in English.

ENTERPRISE

are being led away more and more by vagaries of fashion, and finally, as new inventions are increasing and methods of production are being revolutionized, the element of risk in business is also increasing. And the importance of enterprise and of entrepreneur in the modern economic society has become supreme.

TEST QUESTIONS

1. Explain the meaning of enterprise.
2. Should enterprise be distinguished from organisation? Why?
3. Discuss the part played by entrepreneur in production.

U. P. Board

EXAMINATION QUESTIONS

1. What are the functions of an entrepreneur in modern industry? How far these functions are performed by the village artisans in India? (I. A., 1932)
2. What are the functions of an entrepreneur in modern industry? (I. Com., 1932)
3. Who is an entrepreneur and what specific work does he perform? (I. Com., 1932)

Rajputana Board

1. Finally explain the importance of organization and enterprise in the modern system of production. Do you think there is lack of enterprise in this country? (I. A., 1944)
2. State the functions of the entrepreneur and show how his income is determined by preparing an imaginary productive budget of an artisan. (I. A., 1931)

CHAPTER 39

ORGANISATION

Along with advance of organisation, every part, more limited in its office ; performs its office better ; the means of exchanging benefits become greater ; each aids all and all aid each with increasing efficiency, and the total activity we call life, individual or national augments.—*Herbert Spencer*

§ 1. MEANING OF ORGANISATION

We have so far studied the four factors of production, namely, land, labour, capital and enterprise. We shall now consider the different ways in which production in our days has come to be organised. We have studied, so to say, the nature of the various parts of a machine and shall now discuss the different ways and methods of putting the parts together and learn how they act as a unit when the whole machine is set up.

Production, whatever be its nature and scale, has to be properly organised. Even as simple a producer as a small vegetable-grower has to procure good seeds at a cheap rate, decide how much land will be cultivated and what will be grown therein, arrange for manuring and watering and look to profitable marketing of the vegetables grown. The functions become complicated and numerous in a typical factory of today. The nature and importance of these functions, collectively known as organisation, show that efficiency of production must largely depend upon proper organisation, upon proper assemblage of the various factors of production in most effective proportions. *Organisation may, then, be defined as the attempt towards bringing the various factors of production into the most effective co-operation.*

Place of Organisation in Economics

In the early days of the development of economic theory, organisation was not considered to be a factor of production. It does not mean, however, that in those times production was carried on, or could be carried on, without organisation. As a matter of fact, some sort of organisation is traceable even in very primitive forms and methods of production. But organisation was not very important in the industrial life of those days, so that it did not attract the attention of economists. With the progress of society, however, organisation began to acquire importance. Large scale production, division of labour, international markets and such other economic complexities pushed the importance of organisation to the forefront. It is now realised more than ever before that the agents of production cannot achieve much unless they are in effective co-operation. Their strength lies in their union under one management which will assume the lead in production and endeavour to utilise all the factors so as to achieve the best results and obtain the highest returns. Organisation has now come to occupy an important place in the theory of Economics.

§ 2. THE FUNCTIONS OF THE ORGANISER

The task of an organiser, it may be emphasised, is not limited to the mere assembly of the various factors of production ; for he has to perform many other delicate and important functions as well. They may be explained by comparing the function of a master blacksmith with the function of his apprentice. The apprentice simply works according to the directions given by the master blacksmith. But the work of

the latter is far more difficult and responsible. Besides devoting himself to the work, he has to collect the necessary raw materials like iron and coal. When there is pressure of work, he has to employ outside workers on the payment of wages. He may be required to borrow money, if there is a shortage of capital. Sometimes it is he who has to find out entrepreneurs who willingly bear the risk of the enterprise. Besides combining the services of all the factors of production, he has to estimate the probable demand. After the collection of the various factors, he has to yoke them together in production and to bring them into most effective co-operation. He has to limit production according to his estimate of the probable demand for his wares when ready. Then he has to arrange for their proper marketing. He has to be alert and in touch with the prices at which his competitors are selling their goods and to increase or decrease the prices of his own goods according to the state of competition. All these activities (excluding his labour in the actual preparation of the articles) comes under organisation. Unlike the apprentice, who is concerned only with a particular task which is entrusted to him, the organiser is concerned with production as a whole.

The above is a simple instance. A study of the functions of the organiser or manager of a big factory will throw more light on the importance of his role and on the many-sidedness of his contribution. In every form of production, it is he who combines the various factors of production in a most systematic and most profitable manner, from the initial productive stage down to the sale of manufactured articles. Like the general who marshals the forces under his command and upon whose efficiency depends the victory or defeat in war, the organiser determines the success or otherwise of the business establishment. Specifically his more important functions are the following:

1. Bringing into co-operation the various factors of production;
2. Organisation of Labour;
3. Provision of necessary tools and appliances;
4. Determination of the quantity and quality of product;
5. The marketing of goods; and
6. Miscellaneous functions.

ORGANISATION

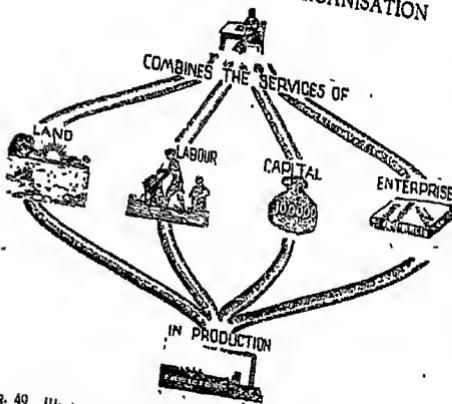


Fig. 49. Illustrating the part played by organization in the production of wealth.

The organiser assembles land, labour, capital and enterprise. This task of assemblage is preceded by an investigation of the most profitable channel of investing productive resources. After completing this investigation, he has to pick up certain entrepreneurs willing to undertake the business risk. He also persuades capitalists to contribute their capital to the business. Then he has to employ suitable labourers and to get proper raw

material. All this preliminary work which must be done before production can begin, is performed by the organiser.¹

(2) *The organisation of Labourers* is his next important function. He has to divide labourers into several groups according to their level of intelligence, diligence, skill and aptitude, and entrust to each group the work best suited to it. He has, moreover, to be careful to see that no labourer remains idle and none is over-worked. He has to arrange production in various stages in such a manner that as soon as a labourer has finished his part of work on a particular commodity, another commodity may come before him immediately for similar operation.

He has, again, to look to the proper supervision of labourers while they are at work ; and to ascertain that the industrious and the efficient are rewarded and the indolent and the inefficient penalised.

(3) *The organiser provides labourers with proper tools, appliances and machinery.* He has to see that the implements and machinery are suited both to the labourers as well as to the raw materials on which they are used. Machinery have to be kept upto-date and the organiser has to be in touch with the mechanical advances made in his branch of trade. We have also to take proper care that the machinery remains fully employed ; that the motive power is adequate ; and that the skill of the labourers is well maintained.

(4) *Above all, the organiser determines the quantity and quality of the output.* The goods produced are meant for sale ; business success depends upon the profitable disposal of the goods produced. It is, therefore, essential that the goods should be produced in such quantity and of such quality as may find a ready and profitable market. To perform this function efficiently the organiser has to be in touch with the market conditions and to find out what are the articles in demand and what fraction of the total demand can be captured by him. For instance, if an organiser finds that canvas shoes are well in demand, and of the existing demand he can manage to secure the demand for 1,000 pairs of shoes, then he prepares 1,000 pairs of canvas shoes. In anticipating the demand the organiser has, of course, to foresee the changes in fashion or taste and in the economic position of the purchasers, that might possibly take place in immediate future.

(5) *The problem of marketing the goods produced is also tackled by the organiser.* Speedy sale of the goods at maximum price is the ideal which he tries to achieve. For this purpose he has to know all the markets in which his goods can be sold ; the prices ruling in those markets ; the prices at which his competitors are selling, or can sell, their goods ; and such other factors. It is this sort of systematic investigation which gives success to the organiser.

(6) Besides these, an organiser has to perform a large number of miscellaneous functions. He has to observe the principle of substitution and to know the implications of the laws of increasing, decreasing and constant returns. All these factors have important influence on production.

§ 3. EFFICIENCY OF ORGANISATION

Efficiency of organisation is to be measured by the degree of economy in production. The best organiser makes the best use of factors of production and thus

¹It must not be supposed that one man can supply only one factor of production and not more than one. In fact, a man can and does supply more than one factor. Take the case of a shareholder in a joint stock company. He is a capitalist because he has contributed capital. He is also risk-taker, for he is liable to loss and entitled to a profit. Similarly, a person may contribute capital as well as organise production, thus becoming capitalist and organiser at the same time.

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makes the business yield the highest profit. Efficiency of organisation may, therefore, be defined as the capacity to manage production with great economy.

Efficiency of organisation depends partly upon the efficiency of various factors of production and partly upon the organising capacity of the organiser himself. The former has been discussed in its proper place in this book. The latter is discussed below.

In order that an organiser may be really efficient, he must possess the following qualities :

(1) *Foresight*. An organiser should be capable of anticipating demand in its quantitative and qualitative aspects. He should also be able to take account of the factors that might bring about a change in the nature and extent of the anticipated demand. Such factors may be climatic, or social, or political or economic. He should also be able to visualise the probable cost of production on the basis of the cost of the individual factor.

(2) *Ability to Organise Labour*. The organisation of labourers is of great importance in production and requires great skill on the part of the organiser. The key test of the efficiency of the organiser is his ability to take the best out of each labourer. His attitude should not be tyrannical but sympathetic and kind. At the same time he should not allow the labourers to imagine that he can be trifled with. He should penalise weak and lazy labourers and give rewards to diligent and efficient workers. He should create an atmosphere where labourers may naturally realise that if they improve their worth and efficiency, they will get the lift which they deserve.

(3) *Technical Knowledge*. An organiser should also possess sound technical knowledge. He must know something about the nature, kind, availability and price of raw materials used in his business. Up-to-date knowledge of practical business and marketing conditions is absolutely essential. He should also be in touch with the working and mechanism of the machinery. So important is this factor in production that there is a distinct tendency in America in particular and everywhere else in general to appoint engineers as organisers.

(4) *Ability to Inspire Confidence*. Modern business depends, to a fairly large extent, upon the borrowed capital which cannot be got unless the management of the concern is solid and honest and inspires confidence in the hearts of capitalists. An organiser has to possess the ability to inspire such confidence.

All such qualities are found in some persons while they are absent in others. Poet, it is said, is born not made; the same remark applies to an organiser. The organisational ability is something God-given and is rare. It can be improved through experience and training. Just as good crops are the result more of natural conditions of human skill, similarly successful business is the result more of natural ability of the organiser than of his acquired qualities.

§ 4. ORGANISATION IN INDIA

The factor of organisation is very deficient in our country. In times gone by, this was not so. But during the centuries of industrial backwardness, the old qualities making for efficient organisation have been lost. The importance of organisation, born of its scarcity, is evident from the fact that the factory industries which are well organised are called *organised industries*, while the cottage industries which are not well organised are designated as *unorganised industries*.

Organisation of Agriculture

Agriculture is the most important occupation of this country, but its internal and external organisation is deplorable. The absence of big and consolidated holdings, lack of permanent improvements, absence of drainage system, want of manure and such other factors are examples of poor internal organisation. The chief deficiencies regarding the external organisation are the development of small scale industries which provide subsidiary and alternative occupations to cultivators.

Organisation of Industries

As said above, our cottage industries lack proper organisation which is an important cause of their backwardness. This is, however, not so in the case of factory industries. They are indeed very well organised. It has been observed about the jute mills that they "are a great monument to Scottish enterprise and Indian labour. While Indians have furnished the land and labour for growing, and the labour for manufacturing, Scotland has furnished the brains and the careful oversight."² Again, "In point of efficiency, organisation of the jute industry is perhaps second to none in India".³ The iron and steel industry is also very efficiently organised by foreign organisers. The cotton textile mill industry is also remarkable in point of organisation, though the foreign element is prominent there.

It is, then, clear that we have imported organisation from foreign countries and it is as best as it could be under the circumstances. However, the foreign management has serious weaknesses and shortcomings. Foreign organisers and managers have to be paid very high salaries. They also lose much of their efficiency because of the hot climate of this country. Many of them find it difficult to pull on with Indian labourers who appear to them inefficient and lazy weaklings. Finally, many of them know that they have been given large sums as advances and cannot be dismissed with impunity and, therefore, become irresponsible.

Realising these shortcomings of foreign organisation, our countrymen have begun to send students to foreign countries to acquire practical training in organisation. It is, however, mentioned by experts that managerial skill is difficult to acquire but the local talent is showing growth and improvement. Stimulated by the requirements suggested by the Indian Fiscal Commission for Industry which is granted protection, Indianisation is making progress.

§ 5. PROBLEMS OF ORGANISATION

The most important problems which an organiser has to solve are three :

1. The problem of division of labour (including the localisation of industry).
2. The problem of the scale of production.
3. The problem of the legal organisation of the business concern.

We shall devote the succeeding three chapters to these three problems of organisation.

TEST QUESTIONS

1. Explain the meaning of organisation.
2. Give an account of the importance and functions of organisation.
3. What do you mean by efficiency of organisation ? What are the factors on which it depends ?
4. Give an idea of the availability of organisation in India.

EXAMINATION QUESTIONS

1. What do you understand by organization ? Suppose you were asked to organize the cotton hand-loom industry. How will you do it ? (U. P., I. A., 1944)
2. Fully explain the importance of organization and enterprise in the modern system of production. (Rajputana, I. A., 1944)

²Buchanan, *The Development of Capitalistic Enterprise in India*,

Spillal, *Economic Conditions in India*.

CHAPTER 40

DIVISION OF LABOUR

This great increase in the quantity of work, which, in consequence of the division of labour, the same number of people are capable of performing, is owing to three different circumstances; first, to the increase of dexterity in every particular workman; secondly, to the saving of time which is commonly lost in passing from one species of work to another; and lastly, to the invention of a great number of machines which facilitate and abridge labour, and enable one man to do the work of many.—Adam Smith.

§ 1. EXPLANATION AND EFFECTS OF DIVISION OF LABOUR

The first important problem with which an organiser has to deal is the division of labour. He divides and subdivides the entire labour force into a number of groups, each performing one complete or incomplete process. One labourer thus comes to perform only a part of a process or one process out of a number of processes necessary to produce a commodity. This is the division of labour which has immensely benefited humanity inasmuch as it has increased output at reduced cost per unit.

Division of labour had not made its appearance in the very early days of human habitation. Each man, or family, of those days satisfied all of his, or its, wants through individual efforts. If somebody wanted a hut, he had to prepare it himself. If he wanted fur to cover his person, he killed an animal and prepared the fur. Similar considerations applied to each commodity wanted by human beings. But as society made progress, human wants increased; man began to make efforts to devise ways and means of increasing production to satisfy his fast-multiplying wants. In this attempt, he hit upon the division of labour. It was realised that production could be increased and more wants satisfied with the same amount of labour if each man was made to produce the commodity for the production of which he was best fitted; and to exchange his surplus commodities with the surplus commodities of other persons, which he required. For instance, if a man was expert as a carpenter, he was to make chairs and tables all the time; and to exchange his surplus chairs and tables for food, cloth, and other articles of his requirements; and division of labour was thus introduced. The advantages of this invention were so great that it was not only extended in its scope but its form was also made more complex and far-reaching, as we shall presently study.

Division of labour has become a very fundamental characteristic of the modern age. Two conditions must be present to make division of labour possible. Firstly, labourers must work in some sort of co-operation. Unless there is a group of labourers, they cannot obviously be divided. A single worker is incapable of division. Secondly, the exchange of articles should be possible. If division of labour is introduced, a man will produce one or a few commodities only; and in order to obtain other article for his consumption, he will have to exchange his surplus output for the required articles produced by others. Co-operation of labourers precedes and the system of exchange follows the division of labour.

*Forms of Division of Labour

The following are the stages or forms of division of labour :

(1) *Division into Occupations and Professions.* In this form of division of labour, workers are divided into various groups according to the occupations or professions which they are best suited to pursue. For instance, some persons may become culti-

vators, some weavers, some house-builders, some fishermen, some rope-makers, some doctors, some teachers and so forth. This form of division of labour according to occupations is known as *Occupational Division of Labour*. Under it a labourer specialises in a particular occupation to the exclusion of other occupations.

Occupational division of labour was the first to appear on the scene. It appeared at an early stage of economic development. The assignment of separate duties to men and women or of special functions to the king, the warrior, the priest, the medicineman (thus giving rise to certain social classes) are examples of this form of division of labour in the primitive society. A very good illustration of occupational division of labour is the caste system prevalent among the Hindus, according to which the society is split up into four broad divisions, namely, *Brahmins*, *Kshatriyas*, *Vaishyas* and *Shudras*, each entrusted with definite functions.

(2) *Division into Complete Processes*. The next step in the evolution of the division of labour was the breaking up of each occupation into a number of complete processes involved in the preparation of an article, and the sub-division of labourers into the corresponding number of groups. This is known as Division of Labour into Complete Processes. Each group of labourers and each member thereof devotes himself, under this form of division of labour, only to one complete process. The produce of one group of labourers is only a semi-manufactured article which passes on to the other group for the next operation, and so on till it takes the final shape. In an American leather factory, for example, shoe-making is divided into 80 different processes; and labourers of such a factory are divided into 80 groups, each entrusted with a particular process only.

The division of labour into complete processes arises late in the history of human progress and is the second stage in the evolution of this phenomenon. This is the result of considerable increase in human wants to satisfy which the extent of division of labour has to be pushed further.

(3) *Division into Incomplete Process*. With the introduction of machinery and factory system, and multiplicity of wants, division of labour is pushed still further. Each process is now sub-divided into various incomplete processes. Labourers are accordingly divided into different groups, each of which is made to devote itself to one incomplete process only. The work of each is merely a contribution to some joint result (semi-manufactured or finished product) from which it cannot be separated and apart from which it has no value. Obviously the worker now devotes himself to a still smaller part of the finished article than under the second stage of division of labour.

(4) *Territorial Division of Labour or Localisation of Industry*. The division of labour into sub-processes is associated with the localisation of particular industries and callings in certain regions. Industries tend to localise in a particular place or region mainly due to some favourable geographical, geological, climatic, economic or political conditions found there. Due to the localisation of the industry, labourers of that place also acquire special skill in the processes or sub-processes of that industry. The availability of such skilled labour is an important cause of localisation. The localisation of industry is a form of division of labour and is called territorial division of labour.

Simple and Complex Division of Labour

Division of labour is sometimes classified into (1) simple division of labour, and (2) complex division of labour. "Division of labour is described as simple when two or more men, working in the same way, co-operate to perform a single task, too expensive, difficult or burdensome to be carried out effectively by one man alone, such as mowing or ploughing of field, lifting heavy goods or hoisting sail of a ship. The division is described as complex when each man or a group of men undertakes a specialised

function which is contributory only to the final result ; in other words, when several persons or groups co-operate to produce some result by each undertaking some contributory part, as for example the complex division of the cotton industry."

The use of the term *simple division of labour*, in the above sense is not free from objection. It is, strictly speaking, not a form of division of labour at all. When some labourers jointly do a piece of work, each working in the same way, they are not divided. They work in co-operation ; but this co-operation of labourers cannot be called division of labour.

If we want to retain the use of the terms *simple division of labour* and *complex division of labour*, we may use the former in the sense of occupational division of labour while the latter may be made to refer to the other three forms of the division of labour.

Advantages of Division of Labour

Division of labour results in an increase in the productive capacity of labourers. This increase in productive power is brought about due to the following factors :

(1) *Gain in Adaptation.* The great advantage of division of labour is that it makes possible the division of labourers into various groups according to their level of intelligence, physical strength and natural bent of mind ; and the allocation to each of them of the task they are best fitted for. Consequently the waste which sometimes follows due to the employment of skilled men to a job which could very well be performed by semi-skilled or even unskilled labourers ; or the employment of a less skilled man for a highly skilled work, are avoided. The capacity of each man is applied to the best advantage.

(2) *Gain in Skill.* Another advantage of division of labour is that it requires the labourer to move his muscles, brain and eyes in one particular manner all the time he works ; consequently his limbs become automatic, quick and precise. The skill of a man thus increases through constant practice and specialisation. In the absence of division of labour, a labourer would be a jack of all trades and probably master of none.

(3) *Increased Use of Machinery.* The division of labour brings about a minute sub-division of productive processes. The sub-processes become so simple that many of them can be done by a machine. Division of labour thus leads to an extensive use of machinery. Machinery increases output at lower cost per unit, diminishes the strain on labourers and brings about other advantages which have already been discussed.

(4) *Increase in Number of Inventions.* Inventions of machinery, which are labour-saving devices, owe their origin to the division of labour. This is due to two reasons : firstly, each work is divided in so minute and simple processes that the scope for inventions becomes large. Secondly, when the labourer works on one machine all the time, he gets the occasion for thinking out the improvements that can be made in that machinery.

(5) *Economy of Implements and Capital.* Under division of labour each labourer is engaged in one operation only and requires a few specialised tools which are constantly used all the time. Implements and machinery thus find full employment. Again, since he possesses only few implements, he takes proper care of them and is not likely to lose them.

(6) *Improvement in the Quality of the Product.* Since the finished product receives touches at the hands of master craftsmen, all specialists in their particular work, its quality is bound to be excellent.

(7) *Reduction in the Period of Apprenticeship.* Division of labour brings about a subdivision of production into simple sub-processes and each labourer is required to engage himself only in one sub-process rather than in the entire production. There-

fore, he has to learn merely a part of the work and the period of his apprenticeship becomes short. He saves time and money as a consequence.

(8) *Saving of Time.* Being engaged only in one operation under division of labour, a labourer is not required to move from one place or task to another place or task every now and then or to put down one tool and take up another. The time which is lost in changing work, place and tool is thus saved.

(9) *Saving of Skill.* Since the labourer is given the task for which he is best fitted, his capacity is used to the best advantage and his skill is not wasted. He is also relieved of much monotonous and cheap work which can be performed by women and children and in some cases even by the crippled and the blind.

(10) *Increase in Mobility.* When the processes of production are minutely divided and sub-divided, they become very simple and similar to each other. It becomes easier for the labourer, then, to move from one occupation to another. Mobility of labour is thus increased.

(11) *Expansion and Diversification of Occupations.* The invention and use of new machinery open fresh avenues of employment. Employment as a whole increases; and even women and children and partly disabled persons get some work.

(12) *Other Advantages to Labourers.* Besides these advantages, labourers gain in other forms as well. Division of labour is possible only when a large number of workers work together. Labourers thus come into contact with each other and begin to feel a sense of unity and common interest. They form trade unions and fight for a reduction in the hours of work and an increase in wages, and try to improve their conditions in other ways.

(13) *Effects on Production as a Whole.* The ultimate effect of division of labour on production as a whole is that the output is increased, both in quantity and quality, and is obtained at a comparatively reduced cost per unit.

Disadvantages of Division of Labour

The imposing advantages of division of labour should not lead to the ignorance of its disadvantages. Its disadvantages can be grouped as : (a) direct ; and (b) indirect.

(A) Direct Disadvantages

(1) *Loss of Efficiency and Responsibility.* Specialisation narrows down one's mental outlook. A labourer is required to do and know about only a part of work; he does not usually know more than that. The range of his usefulness is also reduced. He has to repeat the same simple process day in day out and thus becomes an automaton. It is, indeed, a sad confession for a man to make that during his whole life he has done nothing more than fashioning the head of a pin or sharpening its point! Moreover, since the raw material passes through several hands before it is finally finished, no labourer can be made responsible for the excellence of the article as a whole. Labourers lose the sense of responsibility since their responsibility cannot be fixed nor can their irresponsibility be detected.

(2) *Loss of Interest.* When a man manufactures one whole article, he takes pleasure and interest in preparing it. The beauty of the article pleases its maker, brings credit to him and gives him the satisfaction that his work has brought joy and satisfaction to others. But when he is made to work in a factory, in a scheme of mass production, where his contribution cannot be located, he loses interest in the job.

(3) *Monotony.* A labourer who performs the same task all the time he works, begins to feel monotonous. The feeding of a printing machine or the folding of a newspaper and doing nothing else is certainly a dull business. Monotony gives rise to industrial fatigue, mind-wandering and day-dreaming, which reduce the efficiency of

the labourer and his output. To do away with this monotony labourers are sometime allotted different kinds of work.

(4) *Employment of Women and Children.* Division of labour certainly gives employment to women and children, but very often the task is too arduous and laborious for them and seriously injures their health and hinders their growth. This is a matter of great national concern, since weak mothers give birth to weak children ; and weak children turn out to be weak men of tomorrow.

(5) *Loss of Mobility.* If a workman is engaged in doing only one kind of work, he may remain fit for no other occupation. The mobility of labour may thus be seriously curtailed. But, it must be pointed out, if division of labour is carried to a fairly great extent, the processes and sub-processes of different industries may become so simple as to be almost alike, in which case the mobility of labour may increase.

(B) Indirect Disadvantages

Division of labour also brings about certain indirect disadvantages. Associated as it is, with the working together of a large number of labourers in a factory or a mill, it gives rise to all the disadvantages of factory system, like the over-crowding of towns and the loss of personal contact between the employer and the employee. Working in group also makes a labourer dependent upon other labourers. If a man is absent and one part of the job is stopped, the entire production may come to a standstill.

Obviously, the advantages of divisions of labour far exceed the alleged disadvantages. Steps have been taken by enlightened organisers to reduce these disadvantages to the minimum. "Short hours, leaving more time for leisure ; rest pauses ; welfare schemes involving the provision of rest rooms, reading-rooms, dining-rooms and playing fields; co-partnership arrangement and profit sharing schemes, these are among the methods now being widely adopted to restore to the workers some measure of responsibility and to counteract the effects of routine and monotony."¹

Limitation of the Division of Labour

Adam Smith, the Father of modern Economics, has treated the subject of division of labour with an ability and perfection which has never been equalled. He mentions the following limitations of the division of labour :

(1) *The Nature of Occupation.* The extent to which the division of labour can be carried depends upon the nature of occupation. There is, of course, a limit beyond which the sub-division of processes cannot be carried.

(2) *The Extent of Markets.* Whether the division of labour can be carried to the extent rendered possible by the nature of the industry, depends upon the extent of market. If the market is great, the division of labour also tends to be carried to an advanced stage. If the market, on the other hand, is small, division of labour must be little.

(3) *The Machinery of Commerce.* The extent of the market is determined by the machinery of commerce, the facility of transport, the banking system, and the like. In order to be able to trade, people must be able to communicate with each other, to send goods cheaply and quickly, to receive and pay money satisfactorily, and so forth.

✓ § 2. THE LOCALISATION OF INDUSTRIES

There are certain regions or districts which possess special advantages condu-

¹Thomas, *Elements of Economics*, p. 110.

tive to the development of a particular industry or industries. Attracted by these favourable factors, industries tend to-congregate in such regions and districts, till their names become associated with those industries. The tendency of industries to congregate at one particular place is known as localisation of industries or the territorial division of labour. Good instances of localisation of industries in our country are furnished by the jute industry which is localised in the neighbourhood of Calcutta ; printing and dyeing industry which is localised in Farrukhabad ; glass and bangles industry centred in Firozabad ; the cotton textile industry associated with Bombay and Ahmedabad ; sugar industry of U. P. and Bihar ; and iron and steel industry in Tatanagar.

When a factory is newly started, the organiser has to determine its locality. To arrive at the right decision, they possess full knowledge of the places where that industry is localized or can be localized. After a careful consideration of the relative advantages of various places from the point of view of availability of raw materials, skilled labour, good markets, means of communication and transport, and so forth, he should locate the industry at the most favourable site. The correctness of this decision is very important and determines, to a fairly large extent, the success or otherwise of the venture. Usually it happens that organisers in the same industry select the same centre or district for the localisation of their factories and thus tend to gravitate to the same region.

Causes of Localisation

It is interesting to investigate into the causes which attract organisers to the same place ; in other words, which lead to the localisation of industries. The more important of such causes have been mentioned below :

(1) *Availability of Power.* The most important cause of the localisation of industries is the availability of power. Coal is perhaps the most important source of power at the present time. It is not economical to carry coal over a long distance because it is cheap in proportion to its bulk and cannot, therefore, bear the cost of long transport ; consequently industries tend to be drawn to coalfields. In recent times hydro-electric power has acquired prominence. Hydro-electric stations may attract certain industries in their neighbourhood ; but they usually decentralize them by making the supply of cheap power over long distances, through transmission lines, possible.

(2) *Availability of Raw Materials.* Raw materials are important ingredients of manufacturing since in their absence no production is possible. As such, the regions where raw materials are available sometimes become the centres of industries. The jute industry of Calcutta and iron and steel industry of Tatanagar are partly the result of this cause. Availability of raw materials is a matter of supreme importance in those cases where the materials cannot be economically transported due to their extreme cheapness in proportion to their bulk or due to their fixity. Mining must be carried on where mines exist and lumbering industry must be localised where forests are to be found.

(3) *Climate.* Climate helps in the growth of our industry inasmuch as it determines the conditions of work. Extremes of temperature are not suited to hard work. The regions with temperate climate are, therefore, important for localisation of industries. In certain cases the climate acquires special importance as in the case of cotton textile industry. This industry requires moist climate so that fine thread could be spun out of cotton. If climate is dry, the thread soon becomes dry and breaks. It is the climate of Bombay which has made it the centre of cotton manufacturing industry of India.

(4) *Availability of Skilled Labour.* The origin and persistence of localisation is sometimes the result of the availability of skilled labour. The glass bangles manu-

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facturing industry of India is localised at Firozabad not because it is near the sources of raw materials or the markets, but simply because skilled labour is available here. The localisation of printing and dyeing industry at Farrukhabad is also to be explained by the availability of skilled labour there.

(5) *The Momentum of an Early Start.* Sometimes a place where an industry gets an early start begins to enjoy so many advantages with respect to that industry that ultimately it gets localised there. New entrants into business find economical and profitable to set up a factory at the old place rather than at a new place.

(6) *Nearness to Markets.* Since the manufactured articles have to be transported to the markets for sale, the nearness of the market saves the cost of transport. Proximity of markets is consequently an important factor conducive to the localisation of industries. The cotton mills, for instance, have recently been started in our country into the interior at the places of their actual demand.

(7) *Availability of Means of Transport and Communications.* The disadvantage of distant markets is reduced if cheap, quick and 'easy' means of transport and communication are available; consequently an industry may be localised at a place remote from the markets if efficient means of transport exist. The importance of means of transport to the localisation of industries can be better appreciated if we realise that a large percentage of the total manufacturing cost is made up of transporting charges of the raw materials to the factories and of the finished products from the factories to the markets.

(8) *Accessibility of Markets.* Markets should not only exist in the geographical sense but should also be available in the economic sense. The accessibility of markets implies that the purchasers in those markets should have the demand for the goods; the competition therein should not be prohibitive; and there should not exist very high import and export or octroi duties which check the movement of goods. It is interesting to note that the import of motor cars and lorries into India is subject to high import duties but the import of motor accessories and parts is not so liable; consequently the Ford Motor Company has established several motor factories in India, which simply fit the parts imported from America and sell complete lorries, thus effecting a saving in import duties.

(9) *Miscellaneous Causes.* There are various miscellaneous considerations also which favour the localisation of industries. The availability of water for factory use and of cheap land are some of the instances.

Advantages of Localisation

The localisation of industries in any particular region is a matter of great advantage. The following are the important advantages thereof:

(1) *Growth of Skill.* When an industry is localised in a particular place, the labourers of that place acquire special skill in that industry. The skill once acquired becomes hereditary and is passed on from father to son. Small children daily see the work that is done in the factories and through constant observation, helped by natural aptitude, learn the intricacies of trade in no time.

(2) *Growth of a Local Market for Skill.* Localisation gives rise to a local market for a particular kind of skilled labour. An organiser of a new factory in that line can find skilled labour in that market, while the labourers skilled in that line can hope to find employment there. Not only does the labour become specialised, but specialised machinery also makes its appearance. Localisation enables the introduction of a minute division of labour, co-operation of a large number of entrepreneurs in matters of common interest, and a keen sense of competition in productive efficiency, all of which lead to the invention and use of highly specialised machinery.

(3) *Reputation or Good-will.* When an industry is localised in a particular place, the products of that place earn a reputation or good-will for themselves, so that the articles manufactured there find a ready market. Dacca muslin and Lucknow chintzes (*chint*) are celebrated even up to this day, and find more willing purchasers than the products of other regions. Sheffield cutlery is still preferred to several other types of similar goods.

(4) *Growth of Subsidiary Industries.* Near the industrial centre, many subsidiary industries tend to grow. Thus the iron and steel industry generally leads to the establishment of cement industry because the slag, which is the waste product of the iron and steel factory, happens to be the raw material of cement industry.

(5) *Growth of Supplementary Industries.* Localisation of industries also leads to the development of supplementary industries which provide employment to the women and children of the male labourers. Centres of heavy industries usually become the centres of silk industry because cheap labour of women and children is available there.

(6) *Growth of Machinery of Commerce.* An industrial centre becomes a bee-hive of commerce. Huge quantities of raw materials or coal pour in daily, and large amounts of products are sent out regularly. Trade on such a large scale requires the growth of machinery of commerce, which is brought into being. The centres where industries are localised have efficient means of communication and transport, banking organisation and capital market, all of which are valuable national assets.

Disadvantages of Localisation

Localisation of industries which has so many advantages is also the cause of several disadvantages. These disadvantages are enumerated below :

(1) *Narrow Development of Human Skill.* Localisation of industries causes the demand for certain type or types of skill. The labourers possessing such skill hardly get the time to develop other aspects of their intelligence. Localisation, thus, narrows the intelligence and skill of mind. It also imposes a limit to the mobility of growing population. The population of centre where cotton textile industry is localised may not be able to emigrate because it can do no other work.

(2) *Risk of Widespread Economic Suffering.* Localisation makes an industrial centre almost solely dependent on one industry. It may have to suffer seriously if that industry faces bad times. During the depression, profits may be displaced by losses ; factories may close down ; labourers may be thrown out of employment and may not find other sources of earning a livelihood.

(3) *Evils of Industrial Centres.* Localisation is often associated with the physical, economic, moral and social evils which grow unchecked in factories and in industrial centres.

Remedies

The above disadvantages of localisation can, however, be remedied. The risk of one-sided development of human skill and wide-spread economic sufferings can be protected against, if more than one industry is started at one centre. Localisation itself partly supplies this remedy in the form of the development of subsidiary and supplementary industries. Remedies for the evils of industrial centres have already been discussed.

TEST QUESTIONS

1. What do you mean by division of labour ? What are the chief requirements of division of labour ?
2. Describe the chief forms of division of labour. .
3. Write a note on 'simple and complex division of labour.'

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- 4. What are the advantages and disadvantages of division of labour?
- 5. Explain the meaning of localisation of industries. What are its causes? Give Indian illustrations.
- 6. Describe the advantages and disadvantages of localisation of industries.

U. P. Board

EXAMINATION QUESTIONS

- 1. What is meant by the division of labour into (a) Complete processes, (b) incomplete processes? Briefly state the advantages of division of labour. (I. A., 1944)
- 2. What is meant by division of labour? Discuss its advantages and disadvantages? (I. A., 1942)
- 3. What do you understand by 'division of labour' as applied in modern industry? Discuss its economic and social consequences. (I. A., 1938)
- 4. Carefully explain division of labour. How does it arise? What are its advantages? Give examples. (I. A., 1934)
- 5. Write an explanatory note on territorial division of labour. (I. A., 1932)
- 6. What is meant by 'division of labour'? Illustrate its various forms by means of examples, (I. A., 1931)
- 7. Carefully explain the division of labour. How does it arise? Give examples. (I. A., 1928)
- 8. What is meant by division of labour? What are its advantages. Describe. (I. Com., 1945)
- 9. Discuss briefly the advantages and disadvantages of division of labour. What are the limitations of Division of Labour? (I. Com., 1942)
- 10. Discuss briefly the advantages and disadvantages of division of labour. 'The division of labour is limited by the extent of the market.' Explain. (I. Com., 1938)

Rajputana Board

- 1. Is it true to say that division of labour increases immobility of labour? Show how division of labour is limited by (a) the extent of the market and (b) the nature of the employment? Carefully explain your answer. (I. A., 1944)
- 2. What causes lead to the localisation of industries? Illustrate your answer with reference to industries localised in India. (I. A., 1938)
- 3. Explain fully the advantages and disadvantages arising from the introduction of division of labour in production. (I. A., 1934)
- 4. Clearly explain Division of labour. How does it arise? What are its advantages? Give examples. (I. Com., 1944)

Patna University

- 1. State the causes leading to the localisation of different industries. Illustrate some of the consequences of such localisation by reference to industries in Bihar. (Patna, Com., 1942, Annual)
- Other Examining Universities
- 1. Is it correct to say that 'the extent of the market is limited by the division of labour.'? Give your reasons. (I. A., 1934)
- 2. Is division of labour necessarily beneficial? (Punjab, I. A., 1934)
- 3. What is localisation of industries? Study its causes. (Punjab, I. A., 1932 and 1936)
- 4. Explain and illustrate the assertion that the division of labour is limited by the extent of the market, Point out the benefits resulting from widely extended markets; point out any drawback. (Punjab, I. A., 1930)
- 5. What different forms of division of labour do you find in the urban and rural areas of Delhi? Discuss the statement, "Just as the extent of market limits division of labour, so does division of labour limit the extent of the market". (Delhi, I. A., 1934)
- 6. Describe the advantages and disadvantages of division of labour and show how it is related to production on a large scale. (Delhi, I. A., 1930)

CHAPTER 41

THE SCALE OF PRODUCTION

The advantages which a large business has over a small one are conspicuous in manufacture. But there is a strong tendency for large establishments to drive out small ones in many other industries; in particular the retail trade is being transformed and the shopkeeper is losing ground daily.—*Marshall*

The size of business undertakings has greatly increased in recent times. Production on a large scale is a very important feature of modern industrial society. Formerly we purchased our shoes from a petty *chamar* and cloth from an ordinary weaver; but now these articles are supplied by big factories like the Flex and Bata and gigantic cotton mills of Bombay and Ahmedabad. "The typical unit of production", says Hobson, "is no longer a single family or a small group of persons working with a few cheap, simple tools or small quantities of raw materials, but a compact and closely organised mass labour composed of hundreds of thousands of individuals, co-operating with large quantities of expensive and intricate machinery through which pass a continuous and mighty volume of raw material on its journey to the hands of the consuming-public." When production is carried with large quantities of raw materials, large amount of capital, large labour force, largely efficient organisation and large risk, it is called large scale production. When the factors of production are small in quantity, the scale of production is said to be small.

The instances of large scale production in our country are the cotton textile mills, sugar mills, iron and steel companies, railways and other big undertakings. The examples of small scale production are the village weavers, *khandaries*, black-smiths, workshops and bullock-carts. In all the countries of the world large scale production and small scale production exist side by side, though the former is making progress steadily at the cost of the latter. In India large scale production is making slow but certain progress.

It is natural to enquire at this stage into the causes of increase in the scale of production. These causes are the advantages and economies which large scale production brings about.

§ 1. ADVANTAGES OF LARGE SCALE PRODUCTION

Large scale production is more economical than small scale production. In other words, the cost of production per unit is generally less when the scale of production is large than when it is small. This is the result of the various economies which are made available when the scale is large and which do not arise when the scale is small. Such economies can be divided into two classes: (1) external economies; and (2) internal economies.

1. External Economies

Economies which result due to some external factors operating from without and have no relation to the internal organisation of production are known as external economies. External economies are enjoyed by all the firms in the same industry in common. Development of means of transport and communication, facilities in advertisement, advantageous localisation of industries and such other privileges can be included under it. When the scale of production is large, the sources of external economies grow up in plenty and external economies appear as a consequence.

2. Internal Economies

Internal economies result from the efficiency of the internal organisation of a particular firm which enjoys them exclusively. They have relation to the administrative, technical and commercial spheres of business. There are classes in which the expenses of a factory can be divided and in respect of which economies are made. These are : (1) preparatory expenses ; (2) manufacturing expenses ; and (3) distributory expenses.¹ They have been detailed out in the following table :

INTERNAL ECONOMIES	
Heads of expenditure	Economies
1. Preparatory Expenses	In the purchase of raw materials, fuel, machines and tools and transport services.
1. Manufacturing Expenses	<ul style="list-style-type: none"> (a) In the engine room. (b) In the workshop. (c) In the utilisation of byproducts. (d) In the packing department, and (e) In the office.
3) Distributory Expenses	<ul style="list-style-type: none"> (a) In transport. (b) In agents, travellers and advertisement, and (c) through reduction in fluctuations in demand.

(1) Preparatory Expenses. Before actual manufacturing can begin, a producer has to make certain preparations. Large quantities of raw materials, fuel, machines and tools are required. All these things can be purchased at cheap wholesale rates if the scale of production is large and the demand for them is enormous. Economies can thus, be effected. Again, all these things have to be transported to the factory from different places. This can also be arranged at low rates, if consignments are large since railway and steamship companies quote lower rates for them.

(2) Manufacturing Expenses. After the acquisition of all the preliminary things required in production, the actual work of manufacturing begins. If the scale of production is large, substantial economies can be made in the various departments of the manufacturing business.

(a) Engine Room. We shall begin our survey with the engine room where motive power is generated. The larger the quantity of power required, the less is the cost per unit of power. If you double the amount of the power generated, you need not exactly double the engine or the space or the engineers. In such a case a more powerful engine will certainly be required and the consumption of fuel will also go up.

¹Penson, *The Economics of Everyday Life*.

but the increase in expenses will be much less in proportion to the amount of power generated. Consequently, economies can be effected in the supply of motive power if the scale of production is large.

(b) *Workshop.* There is a great scope for economies in the actual workshop, which can be attained by increasing the scale of production. If the scale of production is large, the number of labourers employed will also be great, with the result that a thorough and minute division of labour can be introduced. Division of labour brings about a large number of economies, which have already been discussed. Not only labour ; machinery can also be specialised. A big factory can afford to purchase costly machinery, each made for one small use, and can thus take advantage of the economies resulting from the specialisation of machinery. Huge steam-hammers, cranes, hydraulic riveting machines which increase output enormously at very low cost, can be used only by the big companies of today. Again, if the scale is large, machinery may be used for longer hours per day and kept more fully employed as compared to a small business where their use may be shorter and occasional. A large firm also has the advantage of using most up-to-date machinery. New inventions are being made with such rapidity that a machine becomes out-of-date or 'obsolete' very soon. In a big business the machinery, being used day and night, are soon reduced to scrap ; loss due to obsolescence is thus saved and the latest types of machinery can be purchased immediately after their introduction. Economies can be made even in repairing machines, for a large business, where repairing work has to be done regularly, can afford to employ mechanics and carpenters for this purpose and save the profits which are made by repairing workshops. Finally, a large undertaking can spend money on researches and experiments, which is not possible in the case of a small enterprise. Work of this nature leads to an improvement in the processes of production, better utilisation of raw materials, introduction of new designs and patterns and the derivation of the advantages of scientific progress in so far as it affects organisation.

(c) *By-Products.* Now we come to the problem of the utilisation of by-products. Every factory has certain by-products or waste products which it throws away and which if properly used, can be a source of profit. The utilisation of by-products requires special skill, experiment and capital, all of which are available in the case of large scale production and not in case of small scale production. Waste products, which ordinarily involve some expense of removal, become a source of profit in big factories. Thus in the great slaughter house of U.S.A., no part of animal is wasted ; waste products are employed to yield several useful by-products like tallow, fertilizers, glue and gelatine, all of which find ready market.

(d) *Packing Department.* The next important department is the packing department. If a concern is large, it can have its own packing department and can thus save the profits which formerly went to the pockets of outside packers. It can even employ packing machines and effect further economies. Similar economies can be effected in the printing of wrappers, labels and cards.

(e) *Office.* Economies can also be made in the Office where the clerical work is done. If the work is large, clerks can become specialised. Clerks of exceptional intelligence may be given really responsible and skilled work, the less intelligent clerks being given such mechanical work as adding and subtracting. The work of the latter type may even be allotted to special machine designed for the purpose.

(3) *Distributory Expenses.* The expenses incurred in the marketing of the produce are known as distributory expenses. In their journey from the factory to the consumers, the goods pass through various groups of persons, each of which puts a charge to their cost price by way of its reward. If the operations of the factory are carried on a large scale, many economies can be made in the distributory expenses.

(a) Transport. Let us first take the cost of transport of the finished products from the factories to the markets. If the scale of production is large, the consignments will also be large for which railways and steamship companies quote specially low rates. If the goods to be sent to a certain place happen to be enormous in quantity, the producer can very well have his own railway trucks which can be loaded up in the factories and drawn by his own engine to the nearest railway siding and attached to the train.

(b) Agents, Travellers, etc. Similar economies are made in the cost of agents, travellers and advertisement, in the case of large production. "The advertising appropriations of large organisation reach almost stupendous figures, while their sales are promoted by numerous travellers and sales agencies in every part of the world. Small scale enterprise does not provide a sufficient margin to justify such expenditure nor is there usually sufficient capital on its disposal to make possible such outlay."

(c) Reduction in Fluctuations in Demand. A large concern is also not subject to the influences of fluctuations in the market demand to any great extent. A large undertaking employs very experienced and able men whose forecast about the future of the market are very correct. The head of a large firm leaves the work of superintendence and general organisation to his subordinates and devotes himself exclusively to the trade problem. Marshall aptly writes, "The head of large business can reserve all his strength for broadest and most fundamental problems of his trade; he must, indeed, assure himself that his managers, clerks and foremen are the right men for their work and are doing their work well, but beyond this he need not trouble himself about details. He can keep his mind fresh and clear for thinking out the most difficult and vital problems of his business; for studying the broader movements of the markets, the yet undeveloped results of current events at home and abroad; and for contriving how to improve the organisation of the internal and external relations of his business".

§ 2. DISADVANTAGES OF LARGE SCALE PRODUCTION

Though large scale production has a large number of advantages, it is not free from disadvantages.

- (1) If demand is miscalculated and production exceeds the market demand, great loss is incurred.
- (2) The relations between employers and employees do not remain very close; hence they often come into clash with each other. Organised strikes and lock-outs often stop the smooth function of the mechanism of national commerce.
- (3) Then there are certain lines of production which cannot be carried on satisfactorily on a large scale; for instance *bidi*-making or embroidery is specially suited for small scale production.

§ 3. LIMITS OF LARGE SCALE PRODUCTION

The extent to which the economies of large scale production can be realised depends upon the largeness of the scale of production. It may be generally said that the larger the scale of production, the more will be the economies realised and the less will be the cost per unit. But there is a stage beyond which the scale of production cannot be increased with advantage. In other words, there are certain limits beyond which the largeness of the scale of production becomes uneconomic. These limits are imposed by the nature of the business, by the nature of the market and by the nature of organisation. We shall deal with these three limitations below.

(1) *The Nature of the Business.* In some cases the nature of the business carried on is such that large scale production is altogether unsuited for it. Business of this nature can be carried on profitably only on small scale.

(a) Some trades require special personal skill of workers who cannot be replaced by automatic machines. Silk weaving, embroidery work and other delicate works are the examples of such business. They must be carried on on a small scale.

(b) Those businesses where the personal taste of the consumer is catered for, the scale of production has to be small. A good example of this is the tailor's business. A tailor has to meet the wishes and requirements of each individual customer. Its success depends upon the individual care and satisfaction that he gives. If he increases his business, he may find that he cannot pay adequate attention to each and every customer, with the result that some of them may withhold their custom.

(c) Some businesses, where personal attention of the head is required, are generally small scale businesses. For instance, very fine cotton fabrics are produced not in big cotton mills of Bombay where personal supervision is difficult, but in small mills of Ahmedabad and Sholapur.

(2) *The Nature of the Market.* The limit to large scale production is sometimes imposed by the nature of the market—its extent and stability.

Large scale production turns out enormous quantities of goods which must have very large markets for sale. Large markets, therefore, are absolutely essential for large scale production. If the market for a produce is small nobody will commit the blunder of producing it on a large scale, for in such a case the goods produced will not be sold at all. For instance, the Bombay cotton mills produce cotton goods on a very large scale simply because there is a very great market for these goods; but the vegetable-growers round about Bombay produce vegetables only in small fields adjacent to the city because the market for vegetables is limited in respect of locality, customers and time—vegetables can be sold only in Bombay, to the people who make their purchases in that city, and the very day they are brought from the fields lest they might rot.

Besides the extent of the market, its stability is also an important consideration. If the demand for an article is not constant but uncertain, in other words, if it is quite large at one time but very small at another, it will be a mistake to start big factories for its production.

(3) *The Nature of the Organisation.* A limit to the largeness of the scale of production is also imposed by the efficiency of organisation. This is the most important limitation of large scale production. Organising ability of a man being limited, there is only a particular scale of business which he can efficiently organise; if the scale of business is increased beyond this limit, the efficiency of the organiser diminishes and the production becomes uneconomic.

§ 4. SMALL SCALE PRODUCTION

When production is carried on with small quantities of the different factors of production, the scale of production is said to be small. In modern days, production has a tendency of being instituted on a large scale; but still, small scale production persists with great vigour.

The causes of the persistence of small scale production are to be found in (i) the nature of certain occupations to which small scale is best suited; and (ii) the advantages of small scale.

(i) The following are the cases in which small scale is invariably adopted :

(a) The occupations requiring personal attention and care like tailoring are mostly conducted on a small scale.

- (b) The products which require high artistic excellence are produced by hand-craftsmen who produce them on small scale.
- (c) Some products do not command a wide market, e.g., *bidis* and must be produced on small scale.
- (d) Some occupations by their very nature cannot be conducted on a large scale. Agriculture is an example. It is true that we often hear of big mechanized farms but they are not big as compared with mammoth factories.
- (e) Industries in the experimental stage have to be run on small scale.
- (f) Handicraftsmen, who want to remain independent, work on a small scale.
- (ii) The following are the advantages of small scale production :
 - (a) Firstly, the master can keep a close watch everywhere. His foremen or workmen cannot afford to shirk the duty.
 - (b) Secondly, he saves much of the book-keeping and the elaborate system of checks which are essential in the case of large establishment.
 - (c) Thirdly, the relations between the master and his servants are very intimate and cordial : and there is rarely any occasion for strikes or 'lock-outs'.

The chief disadvantage of small scale production is that it cannot take advantage of the various economies which are available in the case of large scale production. Moreover, difficulty is faced if the commodity of a standard type has to be produced in bulk. In other words, it is unsuited for mass production.

However, the disadvantages of small scale production have been appreciably reduced by a number of factors. Firstly, the small scale producer shares the advantages of external economies which are constantly increasing in importance. Secondly, the advantages of research, new modes of production, etc., which were so far available to big producers only are now available to small producers as well. In all matters respecting trade knowledge, newspapers and trade and technical publications of all kinds are perpetually scouting for him and bringing him much of the knowledge he wants. Finally, the small machinery have been invented for the benefit of small scale product, which can be operated by electricity. They have greatly improved his lot and granted him a fresh lease of life.

TEST QUESTIONS

1. What do you mean by large scale production ?
2. What are the advantages and disadvantages of large scale production ?
3. 'Small scale production has advantages as well as disadvantages. Elucidate this statement with reference to the advantages and disadvantages of small scale production.'

EXAMINATION QUESTIONS

U. P. Board

1. Describe the advantages of large-scale production. What large scale industries, in your opinion, can be advantageously established in the U. P. (I. A., 1945)
2. What are the chief advantages arising out of large scale production ? What are its limitations. (I. A., 1939)
3. What are the advantages and disadvantages of large scale production ? Discuss its chief limitations. (I. A., 1945)
4. Discuss the advantages and disadvantages of production on a large scale and production on a small scale. Which form of production would you like to see developed in our own country and why ? (I. A., 1938)
5. Discuss briefly the advantages and disadvantages of the domestic system of production as compared to the factory system of production. Illustrate your answer by means of Indian examples of these two types of production. (I. A., 1931)

6. Mention the main benefits and limitations of large scale production. In your answer refer to Indian industries. (I. A., 1980)
7. What are the chief advantages arising out of large scale production? Indicate its limitations. Give examples. (I. A., 1928)
8. Discuss the advantages of large scale production. (I. Com., 1941)

Rajputana Board

1. What are the limitations to large-scale production? Illustrate your answer with reference to agriculture. (I. A., 1943)
2. Comment upon the merits and drawbacks of large-scale production. (I. A., 1942)
3. Indicate the chief economies that an entrepreneur can obtain from internal resources in an industry. To what degree is he dependent upon external economies for the conduct of his enterprise? Explain. (I. A., 1942)
4. Compare the advantages of large scale and small scale farming. Which of these do you consider suitable in the case of India? (I. A., 1989)
5. Explain the advantages and disadvantages of large scale production. (I. A., 1987)
6. Explain the advantages of production on a large scale? How does cheap means of transportation help production on a large scale? (I. A., 1985)
7. What do you understand by Large Scale Production? Discuss the factors which have come in the way of organisation of a large scale in India. (I. A., 1934)
8. Explain the advantages and disadvantages of large-scale farming. How can such advantages be secured by cultivators of small holdings in India? (I. A., 1945) [For an answer, consult Ch. 27, §5]
9. Discuss the advantages and disadvantages of production on a large scale and production on a small scale. Which form of production would you like to see developed in India and why? (I. Com., 1943)

Other Examining Bodies

1. The advantages of large scale production are so great that it should drive out small scale production in all branches of economic activity. But this is not so. Explain. (Punjab, I. A., 1986)
2. What are the advantages of large scale production? Is there no limit at all to the size of business? (Delhi, I. A., 1999)
3. State carefully the advantages arising from large scale production. Are any evils associated with this form of production. (Delhi, I. A., 1931)

CHAPTER 42

FORMS OF BUSINESS ORGANISATION

When an individual enters business, either actively or as an investor in a business enterprise managed by someone else, he is perhaps as much interested in the form of organisation as in any other feature of the business. This is not surprising for the form of the organisation determines largely what share of the profits the individual may obtain for himself, how much control he can have over the business and how much risk he assumes.—*Gerstenberg*.

If we look to the business establishments all around us, we will find that they have been organised in different forms. Some are owned and managed by one individual ; some are partnership firms ; others are joint stock companies ; while still others are co-operative societies. It is important to discuss the nature and salient features of all these forms of business organisations. Keen observation will reveal that because of the increasing popularity of large scale production, one man's enterprise is losing its importance, partnership is less frequent than before, while the joint stock company has become the most typical and the most wide-spread form of business organisation.¹

§ 1. THE SOLE TRADER

When a business establishment is owned and managed by a single individual, he is known as the sole trader or the individual entrepreneur. If the business yields profits, he alone is entitled to all the earnings ; if it shows a loss, he alone has to bear it. He is also the sole manager, the pivot, as it were, of the entire business.

Individual entrepreneur system is the earliest and the simplest form of business organisation. Even today it is very common and wide-spread. Its importance is, however, declining due to general increase in the scale of production all around. It still persists in such businesses as retail trade and agriculture, and in professions like that of doctors and lawyers. In the business in which personal relationship between the consumer and the producer is important, the individual entrepreneur system is very appropriate.

This system has several advantages. Its formation is easy ; anybody who intends to set up a business establishment is at liberty to do so with the resources at his command. The motive to work hard in the business is also great ; because hard work increases profits and these profits go directly and exclusively to the pockets of the sole traders. Moreover, this system ensures prompt action, so often necessary for the success of the business, since the sole trader must not necessarily consult anybody in his business matters.

This system is not free from disadvantages. The greatest disadvantage is that the liability of the sole trader is unlimited ; in other words, his debts run against his entire property and not merely against the amount of capital employed in his business. Secondly, the size of the business, under this system, necessarily remains small for the productive resources which a single individual can supply are definitely limited. Again, a sole trader does not command specialised and expert opinion which is possible under partnership, and more under the joint stock company, because of large resources of the latter.

¹For greater details, see my *Introduction to Business Organisation*, (Kitab Mahal, Alshabab, price 4 rs.) or *Business Methods and Machinery* Vol. II (Kitab Mahal.)

§ 2. PARTNERSHIP

The need of doing work on a larger scale than is possible under the previous system draws together more than one person to carry on business in partnership. Such a business establishment is called a partnership firm. The Indian Partnership Act 1932 lays down : Partnership is the relation between persons who have agreed to share the profits of a business carried on by all or any of them acting for all. The maximum number of members is 20 in the case of an ordinary firm and 10 in the case of a banking firm. The liability of partners is usually unlimited, as is the case with the sole proprietor, though some of the partners may have limited liability by express agreement. Partners are jointly and severally (separately) responsible for all the debts of the firm.

Partnership as a form of business organisation, is not so important now as it was sometime back. It still persists in retail trade and mercantile establishments of moderate size. Small manufacturing factories are also sometimes organized on the partnership basis.

Partnership has many advantages. It can be formed very easily, though the ease of formation is not so great as under the individual entrepreneur system. Motive to labour hard to make the business a success is quite considerable. "So great is the risk arising from unlimited liability, so direct is the relation between the partners, that the stimulus to production operates powerfully." Again, since the resources of more than one persons are available here, the scale of production becomes fairly large. The capital, skill and business ability at the command of a partnership firm are often greater than those available to a sole trader. The combination of partners and their resources also makes differentiation, specialisation and division of labour possible.

Partnership has certain defects as well. Though the capital at the disposal of the firm is large as compared to a sole trader, it is not large enough for starting big factories and big transport agencies which typify the modern size of business establishments. The unlimited liability is also a great handicap, for that makes the liability of each partner excessive for most purposes. Again, partnership has a very precarious existence and may dissolve at any time. Personal quarrel or lunacy, or death or insolvency of a partner, may lead to the break-up of the firm.

§ 3. JOINT STOCK COMPANIES

The necessity of extending the scale of business still further leads to the co-operation of larger number of persons than is the case under partnership. An association of individuals of this character, formed for carrying on business for their private gain, is known as a 'joint stock company'. It has been provided in the Indian Companies Act that an association consisting of more than 10 persons formed for the purpose of carrying on a banking business and any association consisting of more than twenty persons formed for the purpose of carrying on any other business, is to be known as a joint stock company.

Characteristics of a Company

The joint stock company has some outstanding characteristics. Firstly, capital of such a company is divided into stocks and shares. The stock is owned jointly by a large number of persons. That is why it is called a joint stock company.

Secondly, the shares of a company are transferable. The man possessing a share of the Tata Iron and Steel Company, Ltd., or of the Allahabad Bank, Ltd., may sell it to any other person if he desires.

Thirdly, the liability of the members is limited to the face value of the shares. If the value of a share purchased by a person is Rs 100, the maximum amount that

he can be called upon to pay in all is Rs. 100. It is to impress this fact that the word "Limited" or "Ltd." is added after the name of a joint stock company, e.g., the New Theatres, Ltd., the Bombay Talkies Ltd.

Capital of a Company

The capital of a company is of different kinds which need description. The total capital which a company can raise by issuing shares is called its *Authorised Capital*. Usually a part of the authorised capital is offered to the public for subscription; the rest is issued later as and when more capital is required. The part of the authorized capital which is issued to the public for subscription is known as *Issued Capital*. The part of the issued capital which is actually subscribed by the public is known as *Subscribed Capital*. Shareholders are sometimes called upon to pay the full value of the shares and at others only a part of it. The part of the issued capital which the shareholders are called upon to pay is known as the *Called-up Capital* (the uncalled portion being named as the *Uncalled Capital*). The part of the called-up capital which is actually paid up by the shareholders (some of them often fail to pay their commitments) is known as *Paid-up Capital*.

Management

The capital of a company is divided into a large number of shares. A man purchasing a share becomes a member or one of the proprietors of the company. The number of the proprietors of a company is usually very large. If all of them want to take part in its management, it will really result in mismanagement. Management can best be done by a few chosen persons best suited to the task. As such, the shareholders usually select a few persons from among themselves to direct the general policy of the company, which is often formulated by the shareholders at one of the general meetings. They are called directors, and collectively the board of directors. The actual work of management and administration is delegated to the manager. Sometimes a director is made a manager, when he is known as managing director.

Advantages and Disadvantages

A joint stock company has a large number of advantages. It is the joint stock form of business organisation which makes possible the accumulation of capital on a tremendous scale. Even ordinary people do not mind purchasing a few shares of a company when they know that they can do so without exposing themselves to the risk of unlimited liability and that if they are dissatisfied with the functioning of the concern or if they are in need of money, they can easily sell off their shares to somebody else. It is due to the principles of limited liability and transferability of shares that we have today such large concerns as Tata Iron and Steel Works, Suez Canal, hydro-electric companies and big transport systems. Moreover, a company is in a position to take advantage of rare skill, unusual ability and expert opinion for its resources are really vast. Since a company employs a large number of labourers, experts and technicians, division of labour can be introduced to a fairly great extent. A company, again, has a very long life because a dissatisfied shareholder may go out by selling his share; the concern need not dissolve if one of its members becomes dissatisfied or dies or becomes lunatic or goes insolvent.

We shall now discuss the disadvantages of joint stock company. Firstly, it is difficult to form a company for many legal formalities have to be undergone. Secondly, motive to hard work is often weak. Thirdly, prompt action in business matters cannot be taken since there are so many persons to be consulted and to be brought to agree to a certain policy or action. Again, the management is indirect and delegated and there is likelihood of waste or inefficiency. Moreover, in a company enterprise is separated from organisation; shareholders who are the entrepreneur are not the

managers of the business. This separation sometimes leads to a lack of identity of the interest of the company with the interest of its management, resulting in such practices as manipulation and speculation and the ultimate ruin. But all these disadvantages do not set off the important advantages of joint stock companies. Indeed much of the economic, commercial and industrial progress of today is the gift of joint stock company form of business organisation.

§ 4. COMBINATIONS

In these days of large scale production and keen competition, business units sometimes combine together and form what is called a combination or a combine. Combines are formed to take advantage of the economies of large scale production or to put an end to the keen competition between the competitive business units. Combinations take various shapes and are known by different names like holding companies, syndicates, cartels and trusts. These combinations lead to monopoly, that is, the sole power of controlling market.

§ 5. CO-OPERATION

Another form of organisation which is making great progress these days is co-operation. Co-operation has been defined as a special form of economic organisation in which the people work together for definite business purposes under definite business rules. Its chief object is to eliminate the middleman who grows fat at the cost of the consumers and producers. Co-operation takes three principal forms :

(1) *Producers' Co-operation*. Under this system workers join together to carry on production on their joint and several account. In this way, they can get the profit which usually goes to the pocket of the so-called 'capitalist.'

(2) *Consumers' or Distributive Co-operation*. Under this system the consumers join together to form a co-operative organisation for the purchase of their requirements at wholesale rates. The co-operative store sells goods to the members and later on the profits of the society are calculated and divided among the members in proportion to their purchasers.

(3) *Co-operative Credit*. The chief object of co-operative credit societies is to give loans to its members at cheap rates of interest. Their funds come through deposits and borrowings which are lent to the members for certain definite purposes.

§ 6. PROFIT-SHARING

The antagonism between labourers and capitalists has taken serious turn in modern times and strikes and lock-outs have become frequent occurrences. Labourers feel that capitalists do not give them sufficient wages; they keep for themselves a large share of what is the result of their (i.e., labourers) hard labour. Some capitalists realising the sense in the workers' argument, agree to distribute a portion of the profits of the business among labourers. This is known as profit-sharing plan. Profit-sharing is just an agreement, freely entered into, by which the employee receives a share, fixed in advance, of the profits of the particular business which employs him. The share of profit accruing to him is something in addition to wages and is known as 'bonus'.

TEST QUESTIONS

1. What is the nature of sole trading system? What are its advantages and disadvantages?
2. Write an essay on 'Partnership'.

3. What are the characteristics of a joint stock company? Discuss its advantages and disadvantages.

4. Write notes on : (1) co-operation, and (2) profit-sharing plan.

EXAMINATION QUESTIONS

1. Give an idea of the important types of business organization in the present-day world. (Patna Com., 1944, Supp.)

2. Briefly describe the characteristic features of organisation in a joint stock company. (Punjab, 1932)

3. Describe the system of joint stock companies and explain its advantages. (Nagpur, Arts and Com., 1942)

4. Compare and contrast the main characteristics of a partnership concern with a joint-stock company. Explain why the joint stock company is the most important form of industrial organisation today. (Nagpur, 1941)

5. Consider the advantages and disadvantages of the following as types of business organisation (a) a private firm, (b) a private partnership, (c) a joint stock company, and (d) a co-operative producers society. (Delhi, 1931)

6. What is a joint stock company? What are the advantages and disadvantages of the joint stock form of business enterprise? (Delhi, 1931)

7. Describe the merits and defects of the system of joint stock companies. (Delhi, 1930)

Note.—The subject of co-operation, including consumers' co-operatives, has been dealt with in Book IV, Chapter 55, to which a reference may be made, if necessary.

CHAPTER 43

NATURE AND PROBLEMS OF PRODUCTION IN INDIA

The well being of a people is like a tree's agriculture is its root, manufactures and commerce are its branches and leaves: if the root is injured the leaves fall, the branches break away and the tree dies.—
A Chinese Philosopher

We shall now discuss the nature, the extent and important characteristics of production in our country. The nature of production can be best understood by studying the relative importance of the various occupations carried on in the country. The following table contains this information on the basis of the census of 1931 :

OCCUPATIONS						Percent of total population
A. Production of Raw Materials ..						67.3
(i) Exploitation of animal and vegetation (including agriculture, fishing and hunting)	...	...	...	...	67.1	
(ii) Exploitation of minerals	...	...	...	...	0.2	
						67.3
B. Preparation and Supply of Material Substance	...	...	...	...		16.6
(i) Industry	...	...	...	...	10.0	
(ii) Transport	...	...	...	...	1.5	
(iii) Trade	...	...	...	...	5.1	
						16.6
C. Public Administration and Liberal Arts...	...	...	...	...		2.7
(i) Public force	...	...	...	...	0.6	
(ii) Public administration	...	...	...	...	0.6	
(iii) Profession of liberal arts	...	...	...	...	1.5	
						2.7
D. Miscellaneous	...	...	...	...		13.4
(i) Persons living primarily on their income	...	...	...	...	0.1	
(ii) Domestic service	...	...	...	...	7.1	
(iii) Insufficiently described occupations	...	...	...	...	5.1	
(iv) Unproductive...	...	...	...	...	1.1	
						13.4
						100.0

It is clear from the above table that India is primarily an agricultural country, about 70 per cent of her population being dependent upon one single occupation, namely, agriculture. Manufacturing industry supports only 10 per cent of the population; while trade and transport give employment to merely 7 per cent of the people. Public servants and professionals, like doctors, teachers, lawyers etc., constitute hardly

3 per cent of the total population. The most important forms which production in India takes are, as such, agriculture and manufacturing industries.

§ 1. AGRICULTURE¹

India is the only civilised country in the world whose population depends upon agriculture to such a large extent. Such an absolute dependence upon this one occupation whose success or failure depends upon the eccentricities of Nature, is a source of great weakness to the economy of the country. When there is a failure of rain, a widespread famine, characterized with enormous unemployment and lack of purchasing power to buy foodstuffs, is the usual result. The various Famine Commissions set up from time to time to investigate into the causes and remedies of famines found that lack of industrialisation is the chief cause and rapid industrialisation the best remedy of the extensive suffering with which Indian famines are associated.

The balance of the Indian economy is thus tipped heavily in favour of agriculture. Even this occupational dis-equilibrium would not have been as injurious as it is today because of the backwardness of our agriculture. If we compare the yield per acre of the various crops in our country with the corresponding figures of other countries, we will discover that we are left far behind. Whatever criterion of judging the efficiency of agriculture we might adopt, we will find the same tale repeated. The poverty of the masses cannot be removed unless the defects of this major industry are carefully studied and remedies thought and applied for their removal.

The causes of backwardness of Indian agriculture are partly natural and partly human. The natural causes are the failure of rainfall, the unfavourable climatic conditions, the spread of plant diseases, and the evil of pests, animals, rats and locusts. These natural causes have been partly controlled by various Government Departments and have lost much of their old rigour. They are, as a matter of fact, not so much accountable for the backwardness of agriculture as human factors.

Let us begin with land. The success of agriculture depends to a large extent upon the area which the cultivator tills and which is technically called his holding. In India, holdings are very small. Then, they are divided into tiny fields, scattered and at inconvenient distances. Consequently the application of various mechanical devices and the provision of such simple things as wells and embankments becomes unprofitable, while much labour, time and energy are wasted in moving from plot to plot. Moreover, permanent improvements on land are usually absent. Over a greater portion, it has been aptly observed, the landscape owes nothing to the hand of man; the fields lie unwatered, unfenced and unembanked, without shelter for men or beasts. Irrigation facilities, so important in a country where vagaries of monsoon are a rule rather than exception and where double-cropping is absolutely essential to support an increasing population, are very unsatisfactory. The defective land tenure system is also a grave cause of concern.

The causes related to agricultural labour are also very important. Cultivators partly due to their poverty, partly due to their ignorance and lack of public health consciousness, are physically bankrupt and lack efficiency. Absentee landlordism is still continuing with all the pernicious results it is capable of.

The deficiency of capital, fixed, working and reserve, contributes its own quota to the wretchedness of agriculture and misery of the cultivator. His one important capital, namely, cattle, is far too numerous, but very weak and inefficient. So far as organisation is concerned, it is the one thing lacking to a really serious extent. Marketing facilities are not sufficient and satisfactory, while rural industries

¹See Chapter 80 *The Agricultural Wealth of India, ante.*

which afford subsidiary and alternative occupations to agriculturists, are deficient and undeveloped. Technical improvements in various processes and departments of agriculture have still to be made. A catalogue of all the defects of our agriculture will be a long list indeed. Attention is being paid to make a careful survey of all the causes and of formulating effective remedies to solve them.

§ 2. FACTORY INDUSTRIES

Manufacturing industries provide the next important occupation to the people of the country, 10 per cent of the entire population being absorbed in them. The manufacturing industries are divisible into two broad divisions (1) The factory industries, i.e., the large scale industries which are organised into factories, worked with power-driven machinery, and (2) the cottage industries. There has been a steady increase in the number of factory industries in our country in recent years, especially after the First Great War. Cotton textile mills, jute mills, sugar factories, cement factories, glass factories, paper manufacturing concerns have sprung on all sides. But the factory industries, in spite of their imposing existence and recent growth, give employment to hardly 0·6 per cent of the total population. They have, however, a bright future before them and their recent development is an indication thereof. The realisation of rapid industrialisation, as the most effective remedy for solving many of the economic ills of the country, is sure to stimulate the growth of factory industries. It will be in the fitness of things to give here a short review of the more important factory industries of our country.

Cotton Textile Industry

Cotton textile industry is very important in our country. The most important areas where cotton mills are situated are Bombay, Ahmedabad, Sholapur etc. Recently proximity to market and availability of raw materials have led to the establishment of these factories in the interior, particularly in U.P.; while the ideal of the provincial self-sufficiency has been instrumental in the setting up of similar factories in Bengal.

Of the total demand for cloth in our country, about 40 per cent is satisfied by cotton textile mills; handlooms satisfy another 35 per cent, the remaining 25 per cent of the demand being met by imports. The most important tendency in the recent times in cotton industry has been a considerable increase in the quantity and visible improvement in the quality of weaving trade. Indian mills have now begun to produce fabrics of better counts. Formerly Lancashire was our greatest competitor, but it has of late been largely beaten by our mills. Unfortunately, however, the competition of Japan and China has become more pressing. Japanese competition makes itself felt in case of finer goods, whereas China has begun to compete with the coarser goods. Japanese competition is very severe and to guard against it, protection has been given to our industry while by the Indo-Japanese Trade Agreements efforts have been recurrently made to restrict Japanese imports.

The cotton textile industry is a very ancient industry of our country. In early times, before machinery and power were used, our craftsmen turned out the most elegant fabrics renowned throughout the length and breadth of the world. But when machinery and power began to be used by England and other western countries, they began to produce goods cheaper than India. Indian handicrafts industry, therefore, languished. Later on, efforts were made to start this industry on the factory system, which were crowned with success. Buchanan aptly remarks that one of the principal reasons which led to England's assumption to political control over India was to assure a market for Lancashire cloth. The present-day competition of nature

and efficient British mills against the infant mills of India has been one of the main points of criticism levelled by Indians against the economic policy of Great Britain. In 1851 was started the first cotton mill of this country, which marked the real beginning of the Indian cotton industry. Bombay possessed such favourable conditions for the growth of this industry that mills after mills were started there and she early became the most important cotton textile manufacturing centre of the country. It was after some time that the industry began to disperse and diffuse and that Sholapur, Ahmedabad, Cawnpore and other centres sprang up. Development of this industry has been greatly helped by the American Civil War, the Swadeshi Movement and the First Great War, while the present war is also likely to have a wholesome influence on the whole.

Jute Textile Industry

The next textile industry of the country is the jute industry, which is located near about Calcutta because of several favourable factors. Firstly, the raw material is at hand. Then, Calcutta is a big market for capital and enterprise, while the facilities for the export of manufactured jute goods and imports of machinery are great. Nearness of coal and iron and efficient transport system have been other favourable factors.

This industry is most efficiently organised and has been making huge profits. The recent depression of 1929-32 left this industry much less upset than the cotton industry. A very important factor, which is responsible for the prosperity of this industry is India's monopoly of jute, helped by the concentration of industry in a small area and a wise policy of restricting output in times of falling demand. Jute industry began its career in 1854 when the first jute mill was started in Serampur. Other jute mills soon followed. The Crimean War and the Great War gave this industry great stimulus and helped it to be placed on a sound footing. The entire capital of the jute industry was formerly European, but majority of the shares are now held by Indians. The management is mainly Scottish.

Iron and Steel Industry

Iron and steel industry is called the basic or key industry, providing as it does, steel out of which machinery are made. We have a flourishing iron and steel industry in the country which is localised in the provinces of Bengal, Bihar and Orissa, because of the nearness of iron and coal in these areas. In olden times we had an important iron and steel industry, but it was altogether non-mechanised. It could not face the competition of the western steel industry which had the advantages of machinery and power and declined by allow degrees. Europeans later tried to start this industry in India on a factory basis, when demand for steel had increased tremendously. Efforts were made by European firms and the Government to produce iron and steel, but they did not succeed. The formation of the Tata Iron and Steel Company, which began in the construction of its works in 1905, marks the second stage of the evolution of this industry. Soon after the Tata's had begun to produce steel, the Great War broke out, for the first time in India, in 1913, the production of pig iron in 1911, and of steel, Government soon commandeered the Tata Works which were worked to their full capacity during the period of the war. After the war, foreign industry began to compete with the young Indian industry, and the Government adopted a protective attitude by increasing import duties. Other mills were started under the stimulus of the protectionist policy, just like the Eastern Iron Company, the Mysore State Iron Works, etc. Today India possesses a promising iron and steel industry.

The Indian Sugar Industry

Not less important is the Indian Sugar Industry which has come to the forefront only in recent years. The total number of mills in the country is nearly 140. About three-fourths of these mills are situated in U. P. and Bihar. The number of factories in U. P. is exactly half of the total number of factories in India, while the production of this province slightly exceeds the production of the remaining provinces of India put together. Bihar is a good second, possessing about 25 per cent of the total number of factories and producing about the same percentage of the total production of sugar. Madras occupies the third place from the point of view of number of factories, although the quantity of sugar produced by it is less than that of Bombay which possesses only 7 mills.²

The history of the Indian sugar industry is an interesting reading. In the olden times, we were important sugar producers and exporters. Even as late as 1903, one-half of the sugar produced in the whole of the world was manufactured in our country. The decline of this industry came when beet-root sugar began to be produced in Europe, while Java and Mauritius turned their attention to Indian markets. The deterioration of the industry continued up to 1932, in which year the import duty on foreign sugar was raised to an extent that effective protection was granted. The granting of protection was followed by a phenomenal growth in the number of sugar mills. The history of the present industry, therefore, extends only to last eight years, during which period it has made tremendous progress. India has become almost self-sufficient in sugar, imports having been seriously curtailed. We can export sugar to other countries of the world because our productive capacity is much larger than our internal consumption, while it can be increased still further, if necessary.

Recently the Government of India have followed an injuries policy of reducing the decree of protection. But the sympathetic attitude of the Governments of U. P. and Bihar have been very helpful in the establishment of this industry on a sound footing.

Paper Manufacturing Industry

India has also begun to produce paper and this industry has been making fair progress. The progress has been really great since the grant of protection. The production of paper now exceeds 1 million cwt.

The manufacture of paper by hand had been carried on in India in ancient times, but like several other industries it languished in face of the competition of foreign paper factories. The first paper factory set up in this country was the Bailee Mills, started on the Hooghly in 1790. The famous Titagarh Paper Mills took birth in 1882 which purchased some of the machinery of the Bailee Mills when the latter went into liquidation in 1905. The manufacture of paper, in fact, began in 1922 by the Indian Paper Pulp Company. Indian mills have been started in upcountry centres as well, of which the Upper India Couper Mills of Lucknow is the most important.

Match Industry

The number of match factories in India is about 30. This industry developed from the year 1922 when protection was granted to it by a rise in the import duty to a sufficient height. The history of the match industry began from an earlier date, but the factories set up before 1922 had to be closed as soon as they were brought into being either because of lack of capital, or because of faulty management, or because of error in selecting a suitable site for factories. The only match factory which continued to exist was the Gufrat Islam Factory of Ahmedabad. Since the grant of

²M. P. Gandhi, *The Sugar Annual*.

protection, the industry had made progress and we are now almost self-sufficient. A matter of serious concern is the establishment of match factories in this country by the gigantic Swedish Combine which has a control of more than 25 per cent of the total production of match in the world. There has been a vigorous agitation against the operation of this foreign concern.

Glass Industry

Glass was manufactured in olden times in this country but its modern history dates from 1890, when some pioneer efforts were made for starting the glass concerns. Many of the factories set up after that date did not meet with success, but recently they have been more successful. Output of these factories mainly consists of bangles, chimneys, bottles, etc.

For most part the industry is of cottage variety. The cottage industry is spread over a wide area, but is mainly localised in Firozabad in U. P. and Balgaum in the south. This industry is in a good position and satisfies quite a large portion of the Indian demand for glass bangles. Japanese competition is, however, making its pressure felt. Glass production on factory system has not yet much developed. The existing factories produce glass-wares or bangles as in Firozabad, and lump-wares and bottles as in Naini and Bahjoi. The industry has not progressed satisfactorily because the Government has not granted protection to it, in spite of the recommendation of the Tariff Board in the year 1931.

§ 3. COTTAGE INDUSTRIES

Manufacturing work is carried on not only in the big factories, but also in small work-shops attached to the houses of artisans who work with one or two apprentices or labourers, known as cottage industries. In the narrow sense of the term cottage industries include only those industries which are carried on in the cottage of the workers. Industries conducted in the work-shops are excluded from cottage industries and are known as 'workshop industries'. But in the broad sense cottage industries include all the industries carried on a small scale. "The term cottage industries," says the U. P. *Cottage Industries Committee Report*, "is used in contrast with organised large scale industries carried on in mills and factories and includes subsidiary industry which absorbs only a part of the time of the worker. They cover a wide range from the simple village craft, as those of potter and the charkha maker, to the highly skilled wood work of Nagina or Saharsnpur".

Cottage industries give employment to about 9.6 per cent of the total population whereas factory industries absorb only 0.6 per cent. The natural inference is that the Industrial India is a land of small industries rather than of factory industries. The Industrial Commission made certain cautious observations on the point, which may well be quoted below :

Apart from the beneficent changes brought about by the cotton mill, the rice mill and the flour mill, modern industrial enterprise has left India in substantial possession of its cottage industries. The imports from abroad and the products of Indian factories have been absorbed by the largely increased demands of the country. The artisans produce commodities which are in demand and so far have not been displaced by factory-made goods, and they work under conditions which they prefer to factory life. A general review of the evidence confirms us in the conclusion that cottage industries are a very important feature of the industrial life of India; that they are by no means so primitive as they are usually depicted; and that there is no real ground for belief that they are generally in a decadent condition.^a

^aQuoted by Wadia and Joshi, *The Wealth of India*, pp. 409-410.

Importance of Cottage Industries

Cottage industries are of numerous kinds and are scattered over a wide range. We shall give here a discussion of the important cottage industries of the countries.

Cotton Textile Industry. Hand-spinning and hand-weaving are important occupations of the masses of this country. Of these, spinning is fairly old, and has kept our women busy for centuries. They used to spin in olden times either for home use or for livelihood, though the practice has on the whole declined in recent times. Hand-spinning has lost its importance because the handspun yarn is weak, irregular and expensive as compared with mill yarn.

Hand-weaving, however, still persists and has not been ousted by mills. Generally very coarse and very fine cloth is woven on handlooms. The preparation of coarse hand-woven cloth is largely the result of the Khadi Movement started by the Congress. The production of very fine cloth is to be ascribed to the inability of the mills to provide varied designs and to meet individual tastes.

In recent times efforts have been made by the Indian National Congress, the various philanthropic bodies and the provincial Governments to revive the handicraft cotton industry, but it is said that the attempts to bolster up this out-of-date industry have been comparatively unsuccessful; and it is useless to make efforts to revive this industry. The U. P. Banking Enquiry Committee, however, assert that the decline of hand-loom industry has not been as rapid as is sometimes alleged. Of the total cloth consumed in U. P., about 30 per cent is woven on hand-looms. The industry is reported to show strong signs of vitality.⁴

Leather Industry. Leather industry is rather widespread in the country because animals, which play an important part in Indian agriculture, provide ample hides. Tanning is, unfortunately, not well-developed. Large quantities of hides are provisionally tanned by indigenous coblers either to be sent to Europe or America for better tanning or to be converted into inferior leather goods. Tanning is rather an unpleasant occupation and it might be better done by machinery in factories rather than by human hands on the cottage basis.

Wood Industry. Wood industry has been in existence from very old times, particularly in villages where the necessity of making and repairing the wooden part of agricultural implements makes the presence of the village carpenter absolutely essential. In recent times the urban population has greatly increased the demands of furniture, so that the prospects of the industry have brightened up. The wood industry, as a general rule, should be allowed to continue its present form of cottage industry because the cottage workers live in open healthy surroundings near the source of supply of raw material, while such healthy environment may not be available in a factory; and secondly, because the present demand is not sufficient to justify the establishment of factories.

Metal Industry. Metal Industry has been worked in villages for very long times where the blacksmith prepares the metallic parts of the various agricultural implements whose wooden part is completed by the village carpenter. In the urban areas this industry is mainly organized as a cottage industry and with the production of kitchen utensils and other wares. Wholesale merchants often place orders for knives, scissors and other articles of daily use with the cottage blacksmiths who are carrying their work satisfactorily.

Ceramics. Pottery plays an important part in the Indian life and therefore ceramics is noteworthy cottage industry. The potter plays the significant part in India, particularly in the village economy where he is held in much respect. He produces articles of everyday needs like *surahis*, *kalsas* *handis*, *cheelams* and toys for young ones.

⁴U. P. Banking Enquiry Committee Report.

NATURE AND PROBLEMS OF PRODUCTION IN INDIA

Pottery is a seasonal industry, being carried on only in dry and cloudless months so that the earth could be dried up. This industry is facing a rather hard time because middle classes have now begun to prefer Chinaware to earthenwares, while rich people have begun to purchase brass and other metallic wares.

Oil Industry. Indians use oil in enormous quantities for toilet, lighting food and social and religious ceremonies. This oil is largely provided by village oil-presses, though oil mills also exist in urban areas. The oil-presses still persist and are likely to be so in near future, firstly, because they produce better oil and secondly, because they prevail some prejudice against the use of oil which has come in contact with iron as happens in oil Mills. It is very necessary to develop our oil industry since at present we export our oil seeds to foreign countries and in exchange we import oil; thus the oil-cake which is a valuable manure is lost by us. "To export the entire oil seeds," Dr. Voelcker aptly remarked, "is to export the soil's fertility." The retaining in India of the oil seeds is of the utmost agricultural importance.

Other Industries. Besides the above, there are many other cottage industries carried on cottage basis which may be briefly mentioned. Gur making is one of the most important of them and has been existing in spite of the tremendous increase in the sugar manufacturing industry. Efforts have been recently made by the Government and other private and public bodies to improve this industry. Sugar is also produced on cottage industry basis in *khandasari* and is known as *khandasari* sugar. Then, there is the *bidi* making industry (which is destined to be organised on cottage basis). No machinery is needed; work is carried in open space; workers come and go whenever they like for they have to work on piece wages system; all of which favour the small scale form of organisation. Then there are lac industries, carpet industry, Kashmiri shawl industry, embroidery industry and countless others which are the objects of daily observation.

Difficulties of Cottage Industries

Cottage industries have been declining on the whole for a long time past. Attempts have been made from time to time by the Indian National Congress and other bodies to bring them back to life, which have had the effect of awakening the various Governments to the need of protecting these industries from a speedy death. But sufficient work has not yet been done in this direction; and the cottage industries have great obstacles in their way of prosperity and growth. The important difficulties which the cottage industries have to face are the following:—

(1) The quantity, quality and regularity of the supply of raw materials are far from satisfactory. Workers do not get the right type of material. The village dealers, from whom artisans make purchases, receive their supplies of raw materials from wholesale merchants who do not care what the quality of the material is. The dealers are also careless about the quality of materials because they know they can sell their stocks quite easily irrespective of the good or bad quality thereof. The artisans have to purchase materials from the village dealers either because there is no other source of supply or because he is the only person from whom materials can be had on credit. Sometimes the itinerant giver-of-order also supplies raw materials but the conditions do not very much vary. Even such materials, as they exist, are not steadily and regularly available to cottage workers. Special difficulty is faced in the case

(2) The illiteracy, ignorance and out-of-date practices of cottage workers is another problem. They have to work according to the knowledge which have been passed on to them by their forefathers. Being uneducated and illiterate, they cannot think out for themselves new and attractive designs and patterns, while there is nobody to give them guidance in these matters. The same remarks are true with regard to the standardisation of products. It is a great shortcoming of our artisans that

they are incapable of keeping themselves in touch with the nature of demand and of improving the quality of their goods in the light of such investigation.

(3) There is no agency to estimate the exact demand of the cottage products so that efforts can be made to take full advantage of it or to exploit it further, and, if necessary, to distribute it equitably among the artisans. At present there is over-production of certain articles at one time, while they become very scarce at others. Supply is not tried to be equated to demand. Internal marketing of cottage products is in need of thorough and systematic reorganisation and development along scientific lines.

(4) Foreign trade in cottage products is an altogether neglected factor. There is foreign demand for certain cottage products, while the demand for others can be easily created. But there is no organisation to develop foreign trade in a systematic fashion. Hardly any catalogues are issued or advertisements inserted, while fixity in prices, standardisation of products and regularity of supplies, so necessary for developing foreign trade, are usually lacking.

(5) There are no proper facilities for obtaining credit. Artisans have to borrow from dealers who supply inferior raw materials at high rates, sometime along with the loans for personal expenses at high rates of interest. So that once the artisan enters into a transaction he becomes a life long debtor because of unmanageable liability incurred. Again, considering the high rate of interest charged, they have to part with the finished materials at cheap prices which may be determined at the time credit is taken.

Suggestions for improvement

Cottage industries fulfil a definite function in the economic system of a country and in order that they may discharge them efficiently, all the defects and shortcomings pointed out above should be tried to be removed. The following specific suggestions may be made in this direction :

(1) *Steady Supply of Good Raw Materials.* The defects concerning raw materials require immediate correction. The quality of the raw materials supplied to cottage workers must be improved for the quality of the finished products and the excellence of workmanship largely depend upon this factor. Besides the quality, the supply of raw materials needs proper organisation. Efforts should be made to supply them directly and conveniently to the cottage workers themselves. The raw materials should be as cheap as possible.

(2) *Education of the Cottage Workers.* No less important is the necessity of providing proper education to the artisans. Besides primary education, which will broaden their general outlook, they should be instructed in vocational crafts and manual training. Industrial and vocational schools may be opened which should preferably be put under the Director of Industries.⁵ It was the recommendation of the Industrial Commission that the State should organise demonstrations of the new methods and should set up work-shops for the training of the intelligent workers. Jail and reformatory schools should impart education in industrial crafts so that their inmates may enter into these vocations after completing their stay there. The co-operative department may well undertake a peripathetic system of demonstration with regard to rural industries.

(3) *Technical Guidance.* In addition to education, technical help of definite character may also be given to cottage workers. Advice in technical matters, training

⁵"It is high time that we should endeavour to improve artistic education of our young apprentices by adopting the western system of teaching which will cultivate the taste for beauty and diffuse sound knowledge of its rules. Again the artisans have to be lifted out of their narrow groove and their natural horizon improved if they are to produce fine work. With the lessons on drawing and designing, following traditions of Indian art and craftsmanship, arrangement has also to be made for imparting such general education as will enlarge the mental vision of the artisan while preventing him from falling into a clerical groove." R. K. Mukerji, *The Foundations of Indian Economics*, p. 298.

in the technique of production, inventions of new patterns and designs, are some of the examples of this sort of assistance.

(4) *New Tools and Implements.* Another much needed reform is the introduction of new and improved tools and implements. Our cottage workers have been using old implements, which can be easily improved with remarkable results. This work should be undertaken by Government Experimental Factories and Industrial Educational Institutes. The newly invented implements should be made popular by practical demonstrations and dissemination of knowledge in vernaculars, through bulletins, booklets and handbills.

(5) *Organisation of Production.* At the present time organisation of production of the cottage workers is very inefficient and lacks a system. It has to be modified as to make the realization of the full advantages of division of labour and other such devices possible. The State should give all possible assistance in such endeavours. The realisation of the advantages of factory system so far as possible, while continuing the cottage form, is a principle well worth achievement.

(6) *Supply of Capital and Credit.* One of the greatest difficulty faced by the cottage industries today is the lack of proper supply of finance. Artisans have to borrow in cash from local money-lender who is the village dealer, at high rates of interest, which set away a part of their living wage. It was the opinion of the Industrial Commission that the Director of Industries should give small loans to artisans; while improved tools and implements may be supplied to them on hire-purchase system to become ultimately the property of the artisans. There is much truth in the suggestion that in spite of the not very hopeful experience in the past, the co-operative industrial banks of well organised co-operative urban banks are the best agencies to meet the requirements of the industries satisfactorily. The co-operative institutions may be established with advantage to finance the rural industries for long and short terms.

(7) *Organisation of Marketing.* The necessity of organising the sale of cottage products is of supreme importance. At present the cottage workers are not in a position to capture the market which is definitely theirs. Home markets remain unfulfilled while foreign markets are exploited. With systematic efforts, they can be made available to cottage workers. Creditable work has been done by Arts and Crafts Emporium, Lucknow, towards the restoration of the connection between cottage workers and Indian and foreign markets. Such institutions may be set up at all important centres throughout the country. The Banking Committee recommended that licensed ware-houses and co-operative wholesale depots should be established for the storage and sale of cottage products. Any scheme of marketing should give due weight to proper advertisement. Calico printing of Farrukhabad, Benares silk, Agra carpets and such other articles are exported to London and New York in appreciable quantities because of the advertisement they secured at the Wembley Exhibition in 1924.

(8) *The Principle of Co-operation.* The principle of co-operation should be applied to cottage industries. Co-operative societies can be started for a variety of purposes, as for example, supply of capital; purchase of raw materials and tools and the sale of cottage products. They can provide effective protection to the artisans against the exploitation of the middlemen and the competition of large scale industries. Germany, Switzerland and Italy have derived much from co-operation and we must follow suit.

(9) *State Assistance.* State can render much help in the rehabilitation of cottage industries. The great development of these industries in Germany is the result of state assistance, not through coercive measures as protective duties, but through judicious diffusion of advice, information and education. Our Government must take

lesson from such foreign examples and extend protection to the decaying cottage industries. The Industries Departments have so far concentrated their attention on the commercial aspect of cottage products and not on their qualitative aspect ; they have taught our artisans to produce things which will sell well, and not the things which are artistically excellent. The great deterioration in the quality of cottage products can be effectively checked if these departments take the matter in their own hands, supply good designs and patterns to the workers and provide marketing facilities for their sale.

(10) *Swadeshi Spirit.* Side by side with all these measures must be kindled in the hearts of the people a Swadeshi spirit, the desire to purchase Indian cottage products as far as possible. This will be of great assistance in the sale of cottage products, specially in the beginning when the competition of machine-made goods would be very acute.

The Importance of Cottage Industries

It is sometimes doubted if it is at all advisable to waste time, money and thought on the improvement of cottage industries which seem destined to die a natural death. This suspicion is, however, false for the cottage industries have a distinct place for themselves in the industrial life of the country, and cannot be entirely swept away. It is of great importance that they should be made to play their part in the most efficient manner. Their importance can be appreciated by keeping the following points in view :

(i) Cottage industries provide subsidiary occupation to cultivators, i.e., in their vacant time, the cultivators can carry on industrial production on cottage basis. Some of them also provide alternative occupations to cultivators ; i.e., if they like, they can give up agriculture and take to handicrafts. Moreover, they afford livelihood to thousands of urban artisans. Such an important source of employment is to be preserved and strengthened.

(ii) Cottage industries are suited to the genius of our people and in many respects enjoy natural advantages against large scale production. Given a proper organisation for instruction, finance, production and marketing, many of them can be firmly established to the benefit of that section of the population which has no alternative means of livelihood.

(iii) The growth of cottage industries will lighten the distress of famines. It was the opinion of the Famine Commission of 1880 that the root cause of famines is the unfortunate circumstance that agriculture forms almost the sole occupation of the masses, and they prescribed industrialisation as the only remedy for famines.

(iv) Factory industries have led to the concentration of population in particular areas which has created the problems of over-crowded cities, lack of proper housing, physical and moral degradation, etc. Cottage industries can reduce these evils by the diversification and ruralisation of industries.

(v) Finally, cottage industries afford a means of production where labourers can live in neat, healthy and open dwelling and work with the members of their family. "The collaboration of all the family members not only economises but sweetens labour ; culture and refinement come easily to the artisan through his work amidst his kith and kin."

Factory industries *vs.* Cottage Industries

It is sometimes feared that the cottage industries may not be able to compete with factory industries. The latter derive the advantages of internal and external

^a*Cottage Industries Committee Report*, p. 5.

of large scale production, division of labour and mechanisation, so that if the first of production may be much less than that of the cottage products. This is, of course, true in some cases, but there are other cases in which this is not so. Cottage industries have definite advantages, even in matter of cheap production in some cases, while there are forms of production where the cottage basis is inevitable. (1) In some industries machinery cannot replace the hand labour, as for example in *bidi* making, and they must be organised as cottage industries. (2) Then there are industries requiring high degree of artistic skill of excellence, like *sari*-making and painting. The scale of production of such industries must inevitably be small. (3) The same is the case with industries like tailoring, which cater for personal tastes. (4) Again, all the new industries, are cottage industries in the experimental stage. (5) Finally, there are some small scale industries like machine-repairing, which are natural associates of the factories.

Strictly speaking, cottage industries and factory industries have their distinct spheres of cheap production; and when this distinction can be made, both of them should grow and flourish side by side. There is a certain sphere of competition between the two forms of production also, and here cheapness in production, immediately and in the long run, should be the decisive factor as to which of the two forms should be encouraged and maintained. It is such wise discretion which can help us to maximise the industrial output of the country at minimum cost.

§ 4. EFFECT OF WAR ON PRODUCTION IN INDIA

The present survey would not be complete or realistic unless something is said regarding the effect of war on the productive capacity and nature of production in general in this country. That our productive capacity has been greatly augmented along old channels and newly developed newer channels hitherto unknown or neglected, is an important and satisfactory fact to note. During the war, our imports have been greatly reduced and indigenous enterprise has risen to the occasion to take their places. Our country has come to station, feed and equip a large British, American and African army—an altogether new demand—to cope with which production has been augmented. As the United Nations had to meet the onslaught of a fully regimented and prepared hegemony of totalitarian states, they had to increase their output to the utmost, and India has been called upon to play an important role in this direction. All these factors have been reinforced by a keen desire on the part of industrialists and businessmen in general to plan for an increase in production even when the war is on. Coupled with this fact has been the necessity of increasing production in the post-War period; and this envisages an increase in the production of commodities with a view to bring down the soaring prices, which can be done only by increasing production. All these factors have led to an increase in the production of commodities in India as a general rule. No doubt there have been difficulties in the way. Shipping space being restricted, import of machinery and even skill has been greatly hampered. There has been a dearth of trained and skilled labour as well. Other factors have also proved as obstacles. But they have not been able to prevent us from raising our production considerably.

Effect on Agriculture

War II was their agricultural backwardness. The cessation of imports, especially Burma rice, worsened our food situation and Bengal famine came with unprecedented horror and destruction. India has not been able to feed the fighting forces and Allied Nations as much as she would like to. Efforts were made in almost all the provinces to improve agriculture and increase its output. The "Grow More Food" Campaign

started by the Government, though more spectacular than substantial, without effect. The work started by the Rural Development Departments, Congress Ministries also proved valuable inasmuch as the machinery then set in the awakening then made proved useful. New land was brought under cultivation. Improved methods of farming, supply of improved seeds and manures and such methods were resorted to. Marketing facilities and in some cases transport facilities were sought to be improved. Efforts were again made to prevent the maldistribution of agricultural production by increasing State control in such matters. It is satisfactory to note that production was directed into new channels; greater attention was paid to vegetable growing, fruit-farming, forestry and other subsidiary industries than in the past. On the whole, consciously or unconsciously efforts were made to put India on a better agricultural footing and the achievements were both quantitative as well as qualitative. Though much remains to be done before Indian agriculture can be established on a satisfactory basis, it is good that a beginning has been made.

Effect on Industries

The effect of World War II on Indian industries was still more wholesale and they greatly profited by this war. The output of cotton, textile, sugar, iron and steel and other industries was considerably increased. Many industries were established in this country of which cycle manufacturing, ship building, aircraft industry, engineering industry, arms and ammunitions manufacturing, are excellent examples. Technical efficiency also increased. A plan of the training scheme and of turning out Bevin Boys was launched. Employment exchange points have also been set up to direct the flow of labour into needy channels. All this bodes well for the future. In the near future, there would certainly be much foreign competition and without protection the war-created industries cannot persist. Let us hope that conditions would be provided in which they would be adequately sheltered.

The advantages narrated above have not been monopolised by large-scale industries only; but they have trickled down to the cottage industries as well. Many languishing cottage industries have been given a fresh lease of life while many have been brought into being. And our rural areas are humming with such activities as Handloom weaving, hosiery industry, glass industry, hand-made paper industry, leather goods industries, rubber goods industry, soap manufacturing, and so forth have given great stimulus.

Post-War Planning

While production has thus been encouraged, augmented and increased considerably during the war, their future is brighter still. These are the days of planned development and in our country the Government of India are busy chalking out a programme of our economic development according to a pre-determined plan. But industrialists have outstripped our Government and they have brought out a special "Plan" which ensures the development of agricultural output by 130% and of industrial output by 500% during a period of 15 years. This 15-year Plan would cost the country Rs. 10,000 crores which, is the contention of its authors, the country can very well afford. The Plan has received good response in Government quarters and Governmental reaction is, on the whole, for it rather than against it. We fervently hope that all these ideas will not altogether be thrown to the winds; that a post-War development would be prepared for India on a comprehensive basis; that after the war our productive capacity would be greatly increased and our industries would also be fundamentally improved.

